THE UNIVERSITY OF HULL

Care-Staff Perceptions of Challenging Behaviour in Adults with Autism and Learning Disabilities

Being a Thesis submitted for the Degree of Doctor of Clinical Psychology in the University of Hull

By

Tom Raymond Crossland, BSc (Hons), BSc (Hons)

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Table of Contents

Tables and Figures

TABLE 38. ANCOVA SUMMARY TABLE FOR EFFECTS OF LABEL AND BEHAVIOUR ON THE TREATMENT/CONTROL SUBSCALE SCORES WITH PLACE OF WORK, PERCEIVED STRESS, EXPERIENCE WORKING WITH ASC AND EXPERIENCE WORKING WITH CB AS COVARIATES. 152

Overview

This portfolio thesis has three parts.

The first part is a systematic literature review, in which the theoretical, conceptual and empirical literature relating to care-staff perceptions of challenging behaviour in people with learning disabilities is reviewed. It aims to present an outline of a wide variety of factors that can affect how care-staff think about the challenging behaviour of their clients.

Part two is an empirical paper, which explores the effect the diagnostic label autism has on the perceptions of challenging behaviour that care-staff, who work in learning disability services, hold. To achieve this, four different vignettes and a number of questionnaires were used to assess cognitive and emotional reactions to people who have been diagnosed with autism, or a learning disability. This study also used the data collected to test the concurrent validity of two new questionnaires, the Challenging Behaviour Perceptions Questionnaire and the Challenging Behaviour Representations Questionnaire.

Part three is the appendices, which include various relevant materials that are reproduced, a reflective statement on the process of completing this portfolio plus additional information.

Part 1: Systematic Literature Review

Factors Affecting Care Staff Perceptions of Challenging Behaviour in Adults with Learning Disabilities: A systematic Review of the Literature

This paper is written in the format ready for submission to the Journal of Applied Research in Intellectual Disabilities. Please see appendix 6 for the Guideline for Authors.

Summary

Background

A comprehensive systematic review was performed to establish the current evidence regarding the factors that affect care-staff beliefs and perceptions of challenging behaviour (CB) in adults with learning disabilities.

Materials and Methods

An electronic search of PubMed, Science Direct, PsycInfo, Cinahl and Embase was conducted including the period 1985 to November 2008. This was supplemented by contacting experts in this field, and by hand searching relevant reviews and papers found by electronic searches.

Results

Twenty-three correlational and quasi-experimental, one observational, one survey and three qualitative studies were yielded in the search. Of these, one explored how care-staff construct their understanding of CB and the remaining investigated how internal factors, external factors and training impacts on the perceptions of care-staff. The majority of studies were based on Weiner's (1980) Attribution Model; there was limited support for the utility of this model with care-staff.

Conclusions

There needs to further investigation of the long-term impact of training on staff beliefs about CB and the utility of alternate models should be investigated.

Factors Affecting Care-Staff Perceptions of Challenging Behaviour in Adults with Learning Disabilities: A Systematic Review of the Literature

Introduction

Direct care-staff are at the front line of high quality service provision for people with learning disabilities (LD) and this is especially true of individuals who display what is seen as challenging behaviour (CB). Challenging behaviour has been a difficult concept to define due to the subjective nature of what is considered to be challenging. It has been acknowledged that CB is a social construct and is only able to exist in an interpersonal environment (Banks et al., 2007). That is, behaviour can only be considered challenging if there is an external observer who labels it or its consequences as challenging. Researchers in this area have defined CB in two different ways, by its consequences or by the types of behaviour displayed (Heyman et al., 1998). The most commonly referenced definition of CB is.

> "Behaviour can be described as challenging when it is of such an intensity, frequency or duration as to threaten the quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion" (Emerson et al., 1988).

It is clear that this definition is based on the outcomes of the behaviour either by the individual displaying behaviour or their immediate social environment. However, it is also clear that there are some classes of behaviour, which would be considered challenging, simply due to the behaviour and not solely due to the consequences, such as self-injurious behaviour (SIB).

When professionals are designing interventions to help people who behave in ways that challenge it is often the direct care-staff that are expected to deliver the interventions (Allen, 1999). It is therefore essential that research investigating CB considers the impact of care-staff variables. From a behavioural perspective, it is commonly suggested that CB is a learnt response via feedback to something within a person's environment (Dagnan et al., 1998). From this stance it could be said that direct care-staff are the most likely agents of this feedback (Hastings and Remington, 1994a, Hastings and Remington, 1994b). Therefore, it could also be said that if one analysed the function of CB, it may have developed over time to achieve a response from those within a person's social environment, including members of care staff. For example, if an individual does not enjoy group activities as he finds these settings aversive, and aggressive behaviour in this situation is consistently followed by staff removing him from the group, the person is more likely to become aggressive again in this situation (principle of negative reinforcement). Alternatively, if an individual does not enjoy group activities as he does not get staff attention during these times, and aggressive behaviour is consistently followed by contact with staff, the person is again more likely to become aggressive in this situation (principle of positive reinforcement). Staff response will also continue due to this leading to the aggressive behaviour stopping. Thus a feedback cycle is maintained, by the interaction between staff's behavioural responses to and the CB.

More recently, staff responses to CB have been investigated from a cognitive perspective (e.g. Campbell, 2007). It has been argued that staff behavioural

responses to CB may be mediated by the staff member's cognitions (i.e. their beliefs and perceptions) and emotional response to that behaviour (Snow et al., 2007). Some theorists have attempted to apply attribution theory to staff responses to CB. Attribution theory was first proposed by Heider (1958) and he suggested that when an observer sees an event they try to understand it by attributing responsibility, or find a cause for it. This process of understanding the event is mediated by a number of factors including the perceptions and the beliefs of the observer, which may be built from the context of the event and the actions of the people in the event. These actions and the context are all understood through pre-existing beliefs and perceptions about the world. Weiner (1980) expanded on Heider's (1958) attribution theory and used it to explain the actions of people when deciding whether to help a stranger. He suggested that attributions (or causal explanations) can be categorised along three dimensions: locus, stability, and controllability and that how an individual perceives an event along these dimensions will affect their choice of whether to help or not. Weiner's (1980) model has been used, in the field of learning disabilities, to try to link care-staff perceptions of CB to their resultant behaviour (e.g. Dagnan et al., 1998, Tynan and Allen, 2002, Wanless and Jahoda, 2002, Snow et al., 2007,).

It seems clear that if care-staff perceptions of CB mediate their behavioural responses to that CB then it is important to consider the various factors that may affect their perceptions and by implication their behavioural responses. Since the cognitive-emotional model of behaviour was published by Weiner (1980), there have been a wide variety of studies investigating care-staff

perceptions of CB and some of these have considered environmental and demographic factors that may affect these perceptions including staff stress, staff support, client gender, behavioural topography, training and staff demographic variables. Although there has been limited support for the link between perceptions and helping intention, there have been consistent differences in staff perceptions of CB and it seems timely to draw all the current research together and investigate the most consistent factors that affect staff perceptions. Even though the link of perceptions to behaviour may be tenuous it is widely accepted that how we construct our current situation will affect or emotional state and, although, in the case of paid carers this may not directly link to more or less helping behaviour, it is reasonable to presume that over time incongruent cognitions and negative feelings will have a direct impact on the ability of care-staff to perform their caring role. This may be an explanation for the high staff turnover seen in learning disability and CB services (Hall and Hall, 2002). It is also essential to consider staff perceptions of CB when designing and attempting to implement interventions through staff members. Therefore, the aims of this paper are to systematically review empirical research that investigates factors that affect care-staff perceptions of CB in adults with LD and to consider the potential impact of current research in this area on service delivery and development.

Materials and Methods

Search Strategy

The systematic literature search was conducted by the author and involved discussion with the research supervisor. Broad search terms were used to

cover LD, behaviour problems, perceptions and paid care-staff and a final list of keywords was used in the preliminary electronic search (see Appendix 2).

The electronic databases used to conduct the systematic literature review were chosen to cover a broad range of academic areas and included: PubMed, Science Direct, PsycInfo, Cinahl and Embase. The time-period searched for in all the electronic databases was the beginning of 1985 to the 3rd week of November 2008. The search was updated on 11th June 2009 and no additional papers meeting the reviewer's selection criteria were found. A hand search of articles and cross-referencing of the pertinent review was also conducted. In addition, experts in the field were contacted to further supplement the searches performed.

Inclusion Criteria

The inclusion criteria for the current review were as follows:

Types of studies

Identification of all types of English language original peer reviewed empirical papers, including quantitative, qualitative and mixed methods, in which factors affecting the perceptions held by staff of challenging behaviour are studied. These may be termed as views studies; Harden (2006) suggested that non-interventional studies that place people's own perspectives and experience at the centre of the study may be termed views studies.

Types of participants

All paid staff supporting individuals 18 years of age or older with a learning disability (as defined by the author(s) of the identified research papers) and

exhibiting challenging behaviour (as defined by author(s) of the identified research papers) in the form of self-injury, aggression towards others and any other type of behaviour problem (e.g. damage to property, etc.).

Sample size

No arbitrary cut-off for the sample size was used when selecting studies to be included in the review.

Date of Study

All studies published after the year 1985. This cut off date was chosen due to the development of current cognitive-emotional models of behaviour and cognitive models of perception during the early 1980s and these were of primary interest for the current review.

Exclusion Criteria

The exclusion criteria for the current review were as follows:

Type of study

Any study that did not include the perceptions of care-staff working with people with LD, or any non-empirical original study. This included conference papers, narrative reviews and unpublished thesis articles.

Any studies published in a language other than English were also excluded.

Type of participant

Any study containing the experiences or perception of non-paid carers such as family members.

Study Selection Strategy

Selection was carried out at three distinct stages with papers excluded at each stage if they did not satisfy the selection criteria. All citations that appeared to be beyond the scope of this review were removed following an initial screening of the titles; any duplicates were also removed at this time. Further studies were removed if deemed irrelevant following the assessment of their abstracts. Full texts were then obtained for the resulting studies and these were examined in detail to ensure they adhered to the inclusion criteria for this review. They were reviewed in detail to ensure they were concerning the perceptions of paid care staff and adults with learning disabilities and CB, and that they investigated or considered factors that may influence care staff perceptions.

Results

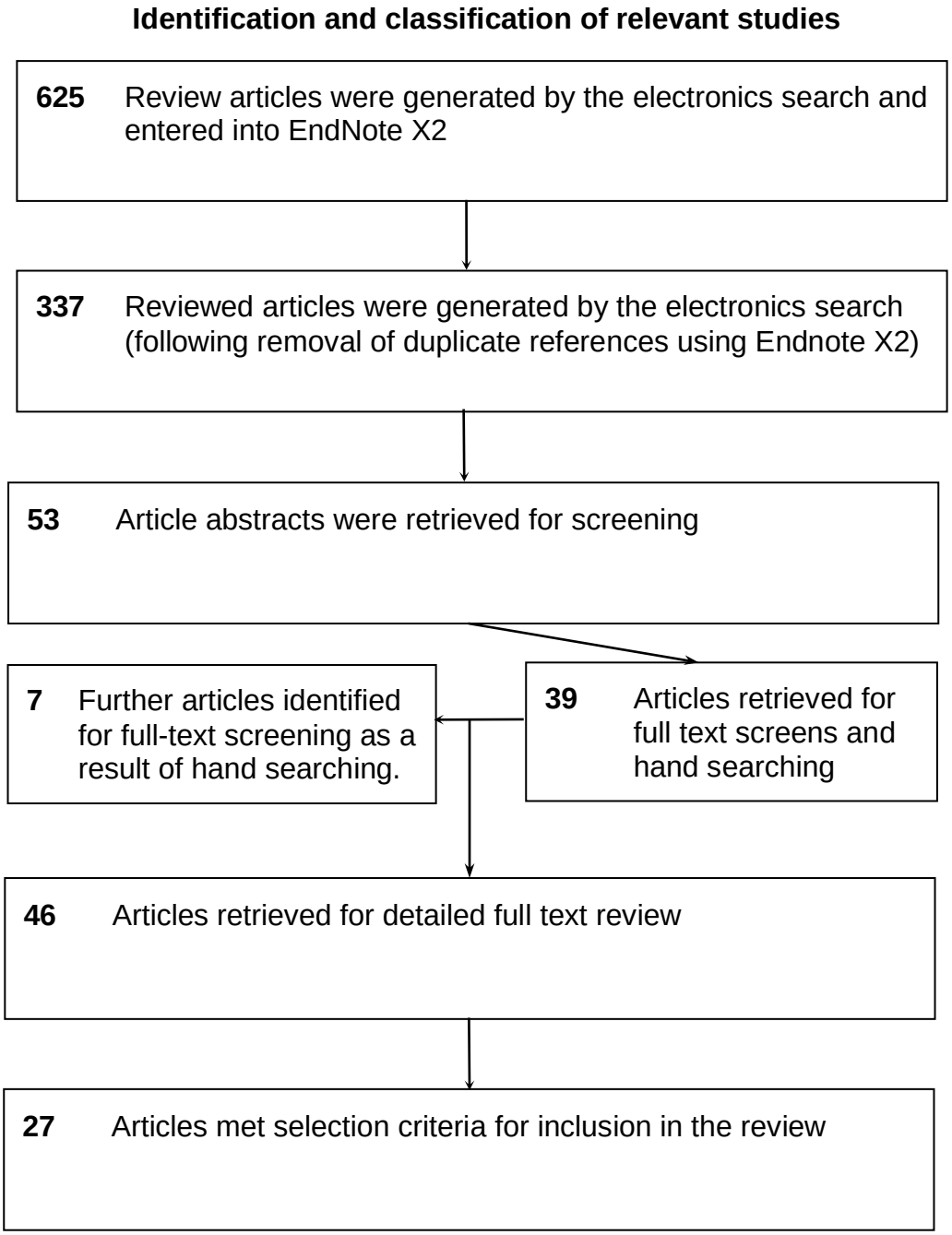

Figure 1. Flow diagram of review process

The initial searches of the electronic databases gave a large number of results (625). However most of these were duplicates, which were removed using the duplicate finding function of EndNote X2. Following the removal of duplicate

records there were 405 references for further consideration. The titles were then screened by hand, which first excluded duplicates not removed by EndNote (leaving 337) and then excluded any studies that did not fulfil all inclusion criteria, many being excluded due to investigating perceptions of family members; investigating CB in children or general psychiatric populations; or otherwise being irrelevant. Following screening using their title the abstracts of 53 papers were retrieved. Of the 53 retrieved, 14 were excluded because they did not fulfil the selection criteria (again they were not concerned with adults with LD or paid care staff or did not study factors effecting perceptions of CB). The abstract screening identified 39 studies for full text retrieval and review. The references lists of these studies were hand searched and yielded a further seven studies, which were added to the list of studies obtained for full text consideration. These 46 studies were retrieved and were given ID numbers. Following a detailed examination of the full texts a total of 27 studies met all the selection criteria and were included in the review. A summary of the studies excluded at the full text review stage can be seen in appendix 3.

Characteristics of included studies

In total, 27 articles met the inclusion criteria and were included. Table 1 summarises the characteristics and key findings of the included studies. The majority of staff sampled by the studies worked in community or residential settings, and a large proportion of the papers recruited from more than one type of service. 10 studies recruited staff from residential services, 8 from community services, 8 from day centres or services providing day activities, 1 study recruited staff from a CB unit and another study recruited staff from an LD inpatient unit. 4 studies either included participants from a large number of

services or did not report where they recruited the staff from. The sample sizes of the included studies ranged from 8 – 276 (with a mean of 58.76 participants), totalling 1469 members of care-staff, the majority of these being women (805, 54.7%). Experience of staff was usually measured by the amount of time they had worked with people with LD, this was not always reported or was reported in a variety of different ways. Of those studies that reported the ranges, the least amount of time working with people with LD was 4 months and the longest was 20 years. The calculation of an overall mean was not possible due to the variety of reporting methods used.

The majority of studies used correlational or quasi-experimental designs (10 correlational and 13 quasi-experimental), with four using observational and qualitative designs (1 observational, Bailey et al., 2006, and 3 qualitative, Heyman et al., 1998, Jahoda and Wanless, 2005, Wilcox et al., 2006) and one using survey methodology (Bromley & Emerson, 1995). Of the studies using correlational designs, four used path or regression analysis (Hill & Dagnan, 2002, Dagnan & Cairns, 2005, Rose & Rose, 2005, Willner & Smith, 2008b) to infer causal direction, one had planned to use mediation analysis but due to lack of association between factors did not (Jones & Hastings, 2003), and the final five used simple correlation matrices (Bell & Espie, 2002, Wanless & Jahoda, 2002, Bailey et al., 2006, Dagnan & Weston, 2006, Snow et al. 2007). Two studies (Bell & Espie, 2002, Campbell & Hogg, 2008) included controls. Bell & Espie, 2002 used the control groups to assess whether staff included in the study showed different characteristics to other general hospital workers. They did not use the controls for the hypothesis testing. This left one study

(Campbell & Hogg, 2008) that used a control group to control for possible maturation effects during the study.

While all studies explored the effects of different factors on perceptions of challenging behaviour, a proportion of them did not explicitly state the theoretical basis of the study; of those that did, most of the studies investigated the application of Weiner's (1980) model of helping behaviour and attempted to apply it to paid care-staff (10 studies).

Quality Assessment

The included studies were assessed for their methodological quality. Due to the variety of study types reviewed, methodological quality was assessed using a revised version of a checklist developed by Radbourne (2008) (see Appendix 4) which has seven quality criteria. The assessment of quality was not used as an exclusion criterion, but as additional information about the studies included and so is reported alongside the key findings of the studies (Table 1). The quality criteria met by each study is shown in appendix 5.

Only six of the included studies met all seven quality checks (Dagnan and Weston, 2006, Wilcox et al., 2006, McGill et al., 2007, Rose and Cleary, 2007, Campbell and Hogg, 2008, Willner and Smith, 2008b). Over 80% of the studies included details of the theoretical background and literature review (85.19%), the aims and objectives of the study (88.89%), a clear description of the context (92.60%), and details of the analysis or sufficient original data (85.19%). A large proportion of studies included a detailed description of the sample (70.37%) and measures used (77.78%). However only 40.74% of studies reported attempts to

independently ascertain the validity and reliability of the measures being used, and half (50%) made it unclear as to whether this had been achieved in the past i.e. by relying on citing previous research and not reporting validity and reliability results.

As stated above, the quality assessment checklist was adapted from Radbourne (2008), who showed the quality checklist to have good inter-rater reliability. To further assess the reliability of the checklist a random sample of ten papers were rated for quality by an independent assessor (a trainee clinical psychologist). The ratings given by the independent assessor were compared with those of the main researcher and any differences were then discussed and an agreement was reached. The original ratings were used to analyse the inter-rater reliability of the modified version of the checklist. Due to the small sample of the papers assessed by the independent assessor, insufficient data were collected to allow for the calculation of Kappa values, which would have controlled for any agreement that may have happened by chance so the percentage agreement for each item will be presented here. All but one of the items had 70% or more agreement with item 6 only having 60% agreement. One item, item 8 had 100% agreement, items 1, 3, 4 and 5 had 90% agreement, item 2 had 80% agreement and item 7 had 70% agreement. This shows generally a good level of agreement between raters and is consistent with the data reported by Radbourne (2008).

Factors affecting perceptions

The research can, broadly, be divided into three nominal classes of factors that affect care-staff perception of CB. Those external to the staff member, such as

type of behaviour displayed or gender of the person displaying the CB; those internal to the staff member, such as emotional state or level of understanding, and those looking at the effect of training on staff perceptions of CB. Although these nominal classes do cross over, for the purpose of this article it is useful to use these distinctions.

Interestingly, only one paper (Heyman et al., 1998) included in this review directly asked care-staff how they construct their perceptions of CB. Heyman et al. (1998) used qualitative methods to explore how care-staff understand CB and how they come to their definitions of CB. The constructions of CB were mainly based on factors associated with the service-users. Staff would use the clients' ability to interact with the environment, or a presumed enduring personality characteristic to explain the clients' behaviour. The staff rarely cited their actions or behaviour or the actions of the service as reasons for the behaviour being challenging. The staff members interviewed noted the dilemma between the good that can result from labelling an individual as challenging (e.g. warn other staff members of potential risk), as opposed to the possible harm that this labelling could do to the person (e.g. by creating self-fulfilling prophecies and altering the service-user interface and so exacerbating the situation).

External Factors

Of the 26 papers included in this review, seven studies explored factors that are external to the staff member; that is factors that the staff member does not have direct control over. External factors investigated were topography of behaviour. Specifically, differences in types of inappropriate sexual behaviour (Willner and

Smith, 2008b); differences in functions or causes of SIB/CB (Jones and Hastings, 2003, Noone et al., 2006); differences between topographies of CB (Bailey et al., 2006, Dagnan and Weston, 2006); the cognitive ability of service-users (Tynan and Allen, 2002); the amount of CB staff are exposed to (Rose and Cleary, 2007); and the gender of the service-user (Wilcox et al., 2006). There is some support for external factors affecting how care-staff perceive CB. However, this is not as strong as the link between internal factors and perceptions.

Differences in behaviour

Willner and Smith (2008b) found no support for a link between type of inappropriate sexually behaviour and perceptions of the behaviour. However, there does seem to be an effect on perceptions of the function of the CB. If the CB has an escape function then care-staff are significantly more likely to perceive the cause of this behaviour as personally controllable and more universal than if the CB has the function of getting attention (Jones and Hastings, 2003) or inability to find an object (Noone et al., 2006). Bailey et al. (2006) further support the idea that the behaviour itself can affect staff perceptions. They showed that there is a significant difference between perceptions of control and stability of the behaviour between SIB and other forms of behaviour. In addition, staff perceive SIB and physical aggression as 'more challenging' than other forms of CB (Noone et al., 2006) and there is also a correlation between type of aggressive behaviour and the staff evaluation of the person (Dagnan & Weston, 2006), with people who presented with physical aggression being evaluated more negatively than people who presented with

verbal aggression. There were no other correlations between topography of behaviour and cognitive or emotional evaluations (Dagnan & Weston, 2006).

Cognitive ability of service-users

Only one study has investigated the effect of the cognitive ability of the service user. Tynan and Allen (2002) found that people with a mild LD are perceived to be in more control of their behaviour, whereas, people with severe and profound LD are perceived as more challenging and the cause of CB will be perceived to be more bio-medical.

The amount of challenging behaviour exposed to

Rose and Cleary (2007) used two different residential settings, a secure service and a community service, to explore the effect of exposure to CB on staff perceptions. The care-staff working in the secure service are exposed to more CB and had greater perceived fear of assault and they perceived the individuals to have a greater amount of evil intent that staff working in the community setting. However, staff working in the secure setting also felt they had more power to confront CB when it occurred that those working in the community service.

Gender of Service User

The final study in the section used a qualitative methodology to explore the discourses around CB displayed by men and women (Wilcox et al., 2006). They used discourse analysis to compare gendered discourses about two individuals whose behaviour challenged. The discourses that care-staff constructed about the women to explain the causes of CB were more about biological causes (e.g.

menstrual cycle and hormones) or personal character flaws of the individual than the discourses about the man.

Internal Factors

There are a number of internal factors (that is factors that are internal to the care-staff) shown by the studies in this review to effect how staff members understand CB.

Expressed Emotion

Weigel et al. (2006) suggested that if there is low expressed emotion (EE) used by care-staff when talking about CB they are more likely to perceive the cause of CB as external to the service-user and not in the control of the service user. These findings are reversed as well, with high EE correlated with perception of CB being internal to the service user.

Emotional factors

In the studies included in the review there is a consistent link between perceptions about the behaviour and the care-staff emotions. This was first shown in this field by Dagnan et al. (1998), who found that the more negative emotions (anger, disgust, anxiety and depression) care-staff feel, the less optimistic they are about changing the behaviour they are. Jahoda and Wanless (2005) supported this link, as they linked feeling frustrated, angry and annoyed with perceptions that the service-user was a bad/difficult person or lacked respect. However, they also found staff thought the behaviour was not personally aimed at them. Wanless and Jahoda (2002) also found that anger was positively correlated with perceived control of the cause of the behaviour whereas sympathy was negatively correlated with control. Although the link

between emotions and perceptions seems to be consistent, Bell and Espie (2002) found no correlations between feelings of support and perceptions. There may also be a link between stress or burnout and perceptions as Snow et al. (2007) linked emotional exhaustion and burnout with the perceived stability of CB. However, Rose and Rose (2005) did not find any primary role for stress in determining perceptions of CB, although they did find significant correlations between emotions and perceptions. One study (Hill and Dagnan, 2002) used regression models to investigate the effect of coping style on staff perceptions of CB. Although, coping style was a predictor of helping behaviour, they did not find any role for coping style in predicting perceptions.

Judgements of Responsibility

Dagnan and Cairns (2005) investigated the effect of staff judgements of responsibility on emotions and perceptions; they found that judgements of responsibility were correlated with perceptions of controllability of the behaviour. They also found that judgements of responsibility for development as well as change of the behaviour were related to the perceived controllability of that behaviour. These judgements of responsibility were also significant and independent predictors of feeling sympathy for the individual and this was a predictor of helping intention. This provides a direct path from judgements of responsibility to staff behaviour via sympathy.

Training

The remaining papers included investigating the effect of training on care-staff perceptions. Unsurprisingly, there is a consistent effect of training programmes aimed at changing staff understanding of CB on perceptions of CB (Grey et al.,

2002, Dowey et al., 2007, Kalsy et al., 2007, McGill et al., 2007, Tierney et al., 2007, Campbell and Hogg, 2008). Each of the included studies investigating effects of training show changes in perceptions of CB that is more in line with the described theoretical perspective of the training course. There appears to be greater effect with longer courses (Grey et al., 2002, McGill et al., 2007, Campbell and Hogg, 2008), but there is also changes in perceptions following very short courses (Dowey et al., 2007, Kalsy et al., 2007, Tierney et al., 2007). McKenzie et al. (2004) also show an effect of the general education of nurses on the perceptions of challenging behaviour. They found that third year students were more likely to attribute passive behaviour and aggression to internal factors than first or second year students. Further to this, compared to first and second year students, third year students were more likely to think that stereotyped behaviour is stable.

The longer courses comprised one longitudinal course on multi-element behaviour support with nine contact days (Grey et al., 2002), one two year diploma on Positive Behaviour Support with 29 contact days (McGill et al., 2007) and one open learning course on Approaches to People with Challenging Behaviour (Campbell and Hogg, 2008). Grey et al. (2002) found that there were significant changes in the number of staff endorsing negative reinforcement, positive reinforcement and self-stimulation as causal explanations for the CB following training; this is more in line with a behavioural model of CB. McGill at al. (2007) supported this and found that there were more behavioural correct score and total score on Self Injury Understanding Questionnaire. They also found that there were significantly lower scores on the Emotional Cause

subscale of the CHABA (Hastings, 1997). The impact of training on positive behavioural approaches to CB is also supported by Campbell and Hogg (2008) who found that participants who had undertaken training significantly increased their scores on the Challenging Behaviour Representation Questionnaire (Campbell, 2007), which is designed to measure evidence-based cognitive representations on five dimensions based on Leventhal's (1984) Self Regulation Model of Illness Perceptions.

The shorter training courses ranged from four hours (Kalsy et al., 2007) to three days (Tierney et al., 2007). The shortest was a course on intervention options when working with people with Down syndrome and a diagnosis of dementia. Although this course was only four hours there was a significant decrease in the attribution of controllability following the course. Dowey et al. (2007) also found that causal explanations were changed following a one day training course. They found that a one day training course based on Applied Behaviour Analysis significantly increase behavioural causal hypotheses. However, these were incorrect behavioural and well as correct behavioural hypotheses. Contrary to the above findings, Tierney et al. (2007) did not find any significant changes in causal beliefs about challenging behaviour following a three day training course, although, they did report a significant increase in staff perceptions of self-efficacy in dealing with CB. These data present a consistent argument for the usefulness of training, with all the training courses having an effect on the beliefs of staff about CB.

Author(s) and Year	Quality rating	Design and Aims of Study	Measures	Participants, setting and experience	Key Findings
Bailey, Hare, Hatton and Limb (2006)	5/7	Explores the application of Weiner's (1980) attribution model of helping behaviour to 'real' service users and to link this to observations of practice. Also, to compare the attributions, emotional reactions, willingness to help and help behaviour between SIB and other forms of CB Between subject questionnaire and observation design	CHABA ERCB Optimism and willingnes to help - 9-point Likert (Stanley and Standen, 2000) Observational Data - coded for helping	43 Direct Care Staff (age (M) = 40.95, SD = 10.33, range = 22-65) from four day centres that provided services for adults with LD. They had worked with LD for a mean of 10.48 years (SD = 6.20, range = 1.50-18.00 years)	Significant differences in attributions when SIB compared to other CB Uncontrollable attributions → depression/anger in both topographies Uncontrollable attributions → total ERCB scores in both topographies Stable attributions → depression/anger in both topographies Stable attributions → total ERCB scores in the SIB condition Internal CHABA scores → depression/anger in both topographies Internal CHABA scores → total ERCB in both topographies No correlations between emotion and optimism No correlations between optimism and willingness to help
Bell and Espie (2002)	5/7	Explores staff-satisfaction, staff emotions and attitudes towards residents. Questionnaire based correlational design	SSQ Marlowe-Crown Social Desirability Scale Index of Psychological Well-being Attitudes to people who display challenging behaviour	25 members of staff working in a challenging behaviour unit, with 8.2 whole time equivalent trained nurses and 16.3 whole time equivalent nursing assistants. 11 Professionals allied to medicine were used as the control group. No other data regarding the participants were reported.	No correlation between feelings of support and attitudes to people with CB. No significant findings reported.

			Organisational Variables looking at staff emotional wellbeing		
Bromley and Emerson (1995)	4/7	Explores information concerning reported emotional reactions, constructs used and perceived stress in people working with CB. Part of survey of characteristics, needs and service responses to people with CB and LD	Survey presented by Qureshi and Alborz (1992)	No demographic detail included in report. The staff worked in all settings and services across a single health district and co-terminus metropolitan borough	**Emotional Reactions** Two way interaction between type of behaviour and emotional reaction Main effect of type of behaviour with regard to annoyance and sadness Anger and annoyance; and disgust, despair, sadness and fear form emotional clusters. **Perceived Causes of Stress** Main effects for place of residence and stressor Extent to which a person's behaviour was wearing over time was cited as a more significant source of stress than any other cause Unpredictability, hopelessness and inability to understand were more stressful than the person injuring themselves, injuring others or the users physical strength **Perceived Causes of Behaviour** 41% internal psychological state or mood 26% past environment (e.g. childhood, home circumstances) 26% current environment (e.g. lack of male involvement) 24% self-stimulatory (e.g. enjoyment) 23% form of communication or control 17% attention seeking 14% specific medical problems 13% LD or specific syndrome (ASC) 11% mental illness

					11% escape or avoidance **Associations** Specific medical problems associated with self-stimulation and lack of communication skills Specific syndromes associated with past environments and lack of communication
Campbell and Hogg (2008)	7/7	Explores the effect of training on the dimensions of Identity, Cause, Consequences, Emotional Reaction and Treatment/Control of CB, dimensions of Leventhal *et al.* (1985) Illness Perception Model. Vignette and questionnaires longitudinal and between subjects design.	CBRQ	Experimental Groups Group 1 had 94 Direct Care Staff (Age (M) = 36.79, SD = 8.52, Range = 23-57, 19 male and 75 female) enrolled on training courses at St Andrews University. Group 2 had 82 Direct Care Staff (Age (M) = 39.82, SD 7.80, range = 23-57, 18 male and 64 female) also enrolled on training courses at St Andrews University. Control Group 100 Staff members (Age (M) = 43.61, SD = 9.61, range = 19-59, 28 male and 72 female) not attending training during the study period. Variety of service settings, including education, day service, community services and hospitals.The mean length of service was 8.54 (SD = 5.26)	The group (1) that had pre training course on 'Approaches to people with challenging behaviour' had higher scores on Cause and Treatment/Control dimensions, but not over all or any other dimension. Pre-training found to improve overall score retention. Overall training improves cognitive representations of CB, but the five dimensions of the model are affected to differing degrees.

Dagnan and Cairns (2005)	6/7	Explores staff judgements of responsibility for CB and emotional and intended helping responses A questionnaire and vignette based design	SIBUQ ASQ Emotional Response and Helping Intention measured as in Dagnan (1998) Responsibility for development and change - two 7-point Likert Scales	62 Direct Care Staff (age (M) = 36.2, SD = 10.9, 30 male and 32 female) working in residential settings. The mean experience of working with LD was 36.2 years (SD =10.9)	↑Anger → ↑internality ↑Sympathy → ↓internality and ↑stability ↑Helping → ↑sympathy and↑responsibility for change ↑Responsibility → ↑controllability Sympathy was the only independent predictor of helping Internality and responsibility for development predictors of sympathy
Dagnan and Weston (2006)	7/7	Explores relationship between topography of behaviour, attributions and emotional response and physical intervention and satisfaction with intervention. Between subject questionnaire based, using 'real' incidents of CB.	Interview about incidents – coded for physical or verbal aggression ASQ Evaluation of person, Anger and sympathy and satisfaction on 7-point Likert scales	37 carers (mean age = 33.9 years, SD = 9.4 years, 11 men and 26 women, 13 nursing staff and 24 unqualified staff) working in residential units in an NHS Trust with a mean experience of 9.5 years (SD = 6.8 years) working with LD	↑internality → ↓satisfaction ↑controllability→ ↑anger + ↓satisfaction negative Evaluation of person associated with negative evaluation of behaviour and ↑anger negative Evaluation of person associated with physical attack
Dagnan, Trower and Smith (1998)	6/7	Explores the application of Weiner's (1980) attribution model of helping behaviour to care staff working with LD and CB. Questionnaire based rating of attributions,	ASQ Evaluation of behaviour - one 7-point Likert Scale Potential for changing behaviour (optimism) - five 7-	40 Direct Care Staff in two groups. Group 1 – 20 staff (age (M) = 32.4 years, SD = 11.3 years, 10 male and 10 female) working in two houses for people with moderate CB. Group 2 – 20 staff (age (M) = 35.5 years, SD = 12.7 years, 4	**Emotional Response Factor Analysis found 2 Factors** Factor 1 (47.4%) = positive loadings on anger, disgust, anxiety, depression and negative loading for relaxed Factor 2 (23.0%) = positive loadings on sympathy, pity and loving **Path Analysis** ↑Controllability Attributions → ↑Negative

		emotions and intention to help.	point Likert Scales Willingness to help - one 7-point Likert Scale Emotional response - nine different emotions each one 7 point Likert Scale	male and 16 female) working in two houses with no CB. Group 1 had a mean of 4.1 years (SD = 5.2 years) experience working with LD. Group 2 had a mean of 8.4 years (SD = 7.6 years) experience working with LD.	Emotions → ↓Optimism → ↓Helping Intention Weiner's (1980) model supported
Dowey, Toogood, Hastings and Nash (2007)	5/7	Explores effect of a single day workshop focusing of behavioural interventions for CB on staff causal explanations. Pre and post questionnaire study	SIBUQ	54 direct care staff (no age reported, 18 male and 36 female) attending the 1-day workshop. The staff had worked with people with LD a mean of 76.7 months (SD = 68.7 months)	Significant increase in behaviourally correct explanations Significant increase in behaviourally incorrect explanations Decrease in internal emotional and organic explanations, 40.1% to 29.62% and 11.8% to 3.36% respectively, no statistical analysis reported for these
Grey, McClean and Barnes-Holmes (2002)	6/7	Explores the effect of a longitudinal training course in multi-element behaviour support on staff attributions of causes of CB A repeated measures questionnaire study was used with three separate time points	Incident analysis sheet (LaVigna et al., 1994) CHABA	34 staff (no demographic information reported) attending a 9 day course over a 6 month period, working in residential, day centres, community and residential, and workshop services. The staff had a mean of 70.45 months (range = 4-312 months) experience working with LD.	**CHABA Scores** Significant increase in learned negative scores Significant decrease in learned positive scores Significant increase in self-stimulation scores **Topography of Behaviour** **Aggression to Staff** Significant increase in learned negative scores **Aggression to Others** No significant changes **SIB -** No statistical analysis Reduction in Learned Positive, Self-Stimulation, Biological, Emotional Factors

Hastings, Reed and Watts (1997)	5/7	Explores community staff attributions and inexperienced healthcare workers attributions Between subject questionnaire study	25 statements regarding cause of behaviour rated on 7 point scales	55 staff (median age = 26-35) working in nine community based-services and 39 general nursing students (median age = 16-20) with 13% males in the total sample. The nursing student had less than three months experience The staff group had a median of 1-5 year experience	Significant main effect of group Significant main effect of behaviour topography Experienced staff more likely to rate He is bored, He is provoked by others, He lives in a noisy place, He is sexually frustrated, He is physically ill, He lives in a crowded place, He is copying what others do, He is in a bad mood He enjoys it Boredom, enjoyment and feeling better were more likely to be marked for stereotypy than SIB Enjoyment and boredom more likely for stereotypy than aggression Others' provocation or to gain attention more likely for aggression than stereotypy Others' provocation more likely for SIB than stereotypy Being in a bad mood more likely for SIB than stereotypy
Heyman, Swain and Gillman (1998)	4/7	Explores views about CB of staff in day centres for people with LD Qualitative exploratory study	Qualitative interview	8 Staff members from one of two day centres for the interviews and then two focus groups were held with six staff members from one of the centres. No information is given regarding demographics or experience of staff	**Defining CB** Three main definition categories; **Abstract Definition** - "Erm, it's probably quiet hard to define" **By Consequence** - "Something that puts them or others in danger basically seems to be the main criteria" **Concrete Definitions** - commonly physical violence, less commonly sexual assault Sometimes this can be a personal attack rather than physical. **Challenge and Unpredictability** - unpredictable behaviour more "challenging" - "The two people I've got, one of them,

there's trigger points, you can actually see the signs of him building up. […] The other person shows no signs at all. There's no trigger points, nothing, and she can just become very very violent towards you for no reason at all."

Explaining CB
Three main explanations
Personalistic Explanations - linked to enduring biochemical or personality characteristics of individual - "But it does seem to realte to his epilepsy"
Situational Explanations - Stress in individual's wider lives - "...if you change something in his bedroom, like a new chest of drawers, that can knock him for six"
Interpersonal Explanations - referenced strategic considerations e.g. manipulation

Organisational Response
Three main themes
Regulation of staff behaviour - co-ordinate staff actions and ensure sanctions are legitimate - "Apply rules and regulations about this and that. Has to be written what you can do, what you can't do, what somebody likes, and what's taking away, like, their privilege"
Resources Management - temporal issues of service-user staff allocation was classified on a four level system. Staff didn't understand it "I don't think it's like labelling, but it causes friction among the staff, saying this person should be category 3, or whatever, because the time I'm having to

					spend, she's deteriorating." **Staff Training** - management often try to improve training but staff question practical value - "You get a lot of training of why someone does it. There's nobody giving you any training on what to do when it actually happens. Because you are not allowed to do anything when it happens, apparently."
Hill and Dagnan (2002)	5/7	Explores the role of coping style, attributions and emotions in response to challenging behaviour in predicting helping behaviour Correlational questionnaire study	SIBUQ ASQ Emotional response and Helping intention measured as Dagnan et al. (1998) SWC-R	33 direct care staff (8 male and 25 female) working in nursing, residential or day centre jobs attending a training course. The mean experience of working with LD is 10.8 years (SD = 10.3 years)	↑Attributions of internality → ↑sympathy ↑Attributions of stability → ↑sympathy ↑Sympathy → ↑helping intention ↑Coping style → ↑helping intention **Regression** Wishful thinking and practical coping significant and independent predictors of helping intention. Internality and controllability significant and independent predictors of helping intention
Jahoda and Wanless (2005)	4/7	Explores the staff's perceptions of individuals who are frequently aggressive. Interviews about an incident of aggression to assess interpersonal appraisals they made.	RET interview + Grounded approach Emotion questionnaire as Dagnan et al. (1998)	36 Direct Care Staff (Age (M) = 42.3 years, SD = 9.76 years, range = 24-60 years, 16 male and 21 female) working in six centres providing day activities for people with LD. Each member of staff had worked for more than six months with the nominated client and had a mean of 8.5 years (SD = 5 years, range = 1-17 years) working with people with LD.	**Main Emotions Felt by staff** Frustration (9), anger (8) and annoyance (7) **Perceptions of How they were Treated by Clients** Not personal aimed at staff n= 15 Lack of respect n = 16 Put down by clients n = 3 Clients were manipulative n = 2 "Sounding board" for clients feelings n = 5 **Perceptions of Clients** Bad/difficult person n = 19 Deliberately creating incident n = 4 Typical behaviour (no consequences) n= 2 Clients behaviour letting themselves down n = 9

					Client out of control n = 3 **Desired action by staff** Physical aggression n = 5 Verbal aggression n = 7 Challenge client n = 8 Walk away n = 12 Avoid clients n = 2 Help client n = 1 **Reason for not doing desired action** Professional role = 23 Get into trouble = 4 Knowledge of clients = 6 Client has LD = 7 Experience = 2 Respect for client = 2 Responsibility for other clients = 3
Jones and Hastings (2003)	6/7	Explores an amended version of Weiner's (1980) Attribution Model of Helping Behaviour, specifically aimed to be applicable to staff with LD and CB. Video and questionnaire based design was used.	Emotional Reactions to CB (Mitchell & Hastings, 1998) with the addition of eight positive affective items Causal Dimension Scale (Ducan & Russel, 1992) Helping Behaviour Scale developed for study	123 Care Staff (age (M) = 35.92 years, SD = 9.4 years; 47 male and 76 female), with 50 working in residential settings, 56 working in day services and 12 working in a community nursing team. Staff had worked with LD for an mean of 40.86 months (SD = 60.86 months)	**Video of Attention Maintained Self Injury Correlations** ↑External controllability attributions → ↑depression/anger affect ↑Personal controllability → ↑confident/relaxed affect **Video of Escape Maintained Self Injury** Associations between locus of control attributions and depression/anger affect. **Overall** ↑Depression/anger affect → ↑endorsing of helping responses. No link from attributions and affect to helping behaviour; no mediating effect investigated.

Kalsy, Heath, Adams and Oliver (2007)	6/7	Explores the effects of staff training in ageing, dementia and people with LD on attribution style. Pre- and post-training questionnaire based study.	CBS Knowledge of aging and LD - 20 item true or false questionnaire Optimism measured as in Dagnan et al. (1998)	97 care staff (age (M) = 42.2, SD = 10.63, 32 male and 65 female) working in Social Services community day centres for adults with LD Staff had worked in their current role for a mean of 60.7 months (SD = 67.04 months)	Significant increase in knowledge post-training No effect of label or behaviour type on attributions of control Significant effect of training on controllability attributions, training lowers controllability ratings ↑Age correlate with ↑attributions of control and longer time spent in current role Longer time spent in current role also correlated with ↑attributions of control
McGill, Bradshaw and Hughes (2007)	7/7	Explores impact of extended positive behaviour support training on knowledge, causal attributions and emotional responses to CB. Longitudinal questionnaire study	SIBUQ CHABA ERCB	79 Community Staff students (age (M) = 33.9 years, range = 21-53) took part in an extended positive behaviour support diploma. They had worked for a mean of 9.8 years (range = 2-30 years) with people with LD.	**SIBUQ** ↑behavioural and correct responses ↑behavioural correct responses ↓internal emotional responses ↑knowledge **CHABA** ↓emotional **ERCB** ↓depression/anger ↓total score **Relationship between Measures** Significant relationship between Emotional subscale of CHABA and Causal Behaviour Internal Emotional subscale of SIBUQ
McKenzie, Paxton, Loads, Kwaitek, McGregor and Sharp (2004)	4/7	Explores impact of nurse education on staff attributions of CB Between subject questionnaire study	Attribution Categories - open-ended questions about 3 main causes of aggression, SIB, destructiveness.	20 student learning disability nurses, 7 first year, 6 second year and 7 third year student. No other demographic data reported	Third year students more likely than second year students to attribute passive behaviour and aggression to internal factors. Third year students were more likely to think that stereotyped behaviour was stable than second year students No other significant results

			Attribution Dimensions - internality, controllability and stability.		
Noone, Jones and Hastings (2006)	6/7	Two studies regarding attributions of CB. 1. Explores attributions about a named client who is "most" challenging. 2. Explores relationship between attributions and CB causal variables 1. A descriptive study 2. A quasi-experimental study	LACS ASQ - global-specific dimension replaced by a personal-universal dimension	**Study 1** 34 Direct Care Staff (18 male and 16 female) working in two residential services for people with LD. Staff had worked for a mean of 10.63 years (SD = 6.98 years) with people with LD **Study 2** 23 Direct Care Staff (14 male and 9 female) working in a residential service for people with aggressive CB. Staff had worked for a mean of 10.63 years (SD = 7.20 years) with people with LD.	**Study 1** Range of CB as 'most challenging' Most common CB = physical aggression toward staff (50%) and SIB (24%) No relationships between attributions and demographics. Attributions stable across clients and CB. **Study 2** Client A = LD + Autism - kicking/hitting staff - escape or avoidance function esp. group interactions, escape demands. Client B = LD + Autism - kicking, punching and slapping - function = attainment of tangible items/objects he could not find No relationship between ASQ and demographics Ratings significantly different between clients rated internal-external, personal universal and controllable-uncontrollable Client A's aggressive behaviour was attributed to more personal and controllable causes, Client B more internal
Rose and Cleary (2007)	7/7	Explores fear of assault in relation to exposure to CB and the extent to which the social psychology model of fear of assault can be	Leather *et al.* (1997) Fear of Assault Questionnaire Questionnaire based on Van der Wurff *et*	87 Direct Care Staff (age range = 20 - 65; 32 male and 56 female). 50 were working in a medium secure setting and 37 were working in residential learning disability services.	↑Exposure to CB → ↑Fear of Assault measured on Leather *et al.* (1997) questionnaire. Staff from secure setting → ↓Trust, ↑Distrust and ↑vigilant of escape Community Staff → ↓Power to confront

		generalised to direct care staff. Vignette and questionnaire based study in two distinct organisations	*al*. (1988) social psychology model of Fear of Assualt	Experience ranged from less than six months to over four years.	clients about CB Social Psychology Model of Fear of Assault (Van der Wurff *et al.*, 1988) accounts for more of variance than demographic factors (42.6% variance)
Rose and Rose (2005)	6/7	Explores the impact of stress on attributions of CB within Weiner's (1980) attribution model of helping behaviour. A between subject self report questionnaires following incidents of CB based design.	ASQ Emotional Reactions, Optimism, intention to help as in Dagnan et al. (1998) GHQ MBI Severity of behaviour measured using 6-point Likert scale	107 Direct Care Staff (age (M) = 35.73 years, SD = 11.05 years, 31 male and 76 female) working in community homes for people with LD. Staff had a mean of 72.68 months (SD = 81.04 months) working with people with LD.	**Emotional Factors** Negative Emotion (NE) - Disgust, Anger, Fright Empathy (E) - Sadness, Sympathy Positive Emotion (PE)- Relaxed, Happiness **Correlations** GHQ correlated to NE MBI scales of expressed emotion and depersonalisation correlated with NE Optimism correlated with E Stability negatively correlated with NE Internality correlated with controllability Internality negatively correlated with empathy **Relationships** Global attributions → NE → Optimism Empathy → optimism MBI-Expressed Emotion → global attributions= Stress no primary role
Snow, Langdon and Reynolds (2007)	6/7	Explores relationships between causal attributions and burnout. Cross-sectional correlation design using vignettes and a semi-	MBI LACS	41 Care Staff (age (M) = 36.9, SD = 10.31) working in inpatient services for people with LD. Staff had a mean of 117.15 months (SD = 83.32 months) experience working with people	**Relationship between Demographic Information and Burnout** Significant positive correlation between number of clients cared for and emotional exhaustion and personal accomplishment **Relationship between Demographic Information and Causal Attributions**

		structured interview		with LD.	Longer time of working with SIB associated with ↑internal and ↑unstable attributions **Relationship between Burnout and Causal Attributions** Significant negative correlations between stable attributions and emotional exhaustion
Tierney, Quinlan and Hastings (2007)	6/7	Evaluate impact of typical staff training course on staff feelings of efficacy, negative emotional reactions and causal beliefs Questionnaire pre- and post- study	CHABA Staff self-efficacy scale ERCB	48 staff (age (M) = 3767, SD = 10.78, range = 21-58) from LD organisations in the Health Service Executive Southern Region in Ireland, who undertook the course "Understanding and Responding to CB" Staff had a mean of 7.58 years (SD = 6.66 years, range 6 months to 24 years) of experience in their current jobs.	Effect of training on feelings of efficacy No other effect of training
Tynan and Allen (2002)	6/7	Explores effect of service-user cognitive ability on staff attributions for aggressive behaviour. A between subject questionnaire and vignette design was used	Causal Attribution Questionnaire measured Weiner's (1980) three dimensions - locus, controllability, stability on 7 point Likert scales Severity of behaviour was measured using one 7-point Likert scale	42 Support Staff (age range = 21-45 years) employed by a provider of community housing for people with LD. They were split into equal groups; Group 1 (severe disability condition, 62% female) had a mean experience of 4 years 8 months (range = 4 months to 11 years) working with LD Group 2 (mild disability condition,	Mild LD condition endorsed more controllability attributions than severe LD Severe LD condition behaviour was viewed as more challenging than mild LD condition Bio-medical explanations more important in severe LD condition than in mild LD condition

			CHABA	57% female) had a mean experience of 6 years 10 months (range = 8 months to 20 years.	
Wanless and Jahoda (2002)	5/7	Explores different methods of obtaining cognitive and emotional responses of staff to CB in people with LD and replicate findings of applicability of Weiner's (1980) attribution model of helping behaviour to staff working with CB. A cross-over design looking at responses to real CB and vignettes and to test Weiner's (1980) model	Attributions, Emotions, Optimism and Helping intention measured as in Dagnan *et al* (1998) The behaviour and person was rated from neutral to extremely bad. RET interview to elicit emotions felt during incidents of interpersonal conflict. Then completed above questionnaires	38 Care Staff (age (M) = 42.7 years, SD = 9.67 years, range = 24-60, 16 male and 22 female) working in six day centres for people with LD. Staff had a mean of 8.4 years (SD = 5.01 years, range = 1-17 years) of experience of working with people with LD.	**Testing Weiner's Model – Vignettes of CB** Control attributions positively correlated with anger and negatively with sympathy Control not correlated with optimism or helping behaviour Anger/sympathy not correlated with optimism Anger positively correlated with helping ie ↑anger → ↑help ↓Optimism and younger age associated with ↑negative evaluations of person and behaviour **Testing Weiner's Model - Real CB** Control positively correlated with anger and negatively correlated with sympathy optimism no correlations Control, anger and sympathy are related to helping but in opposite direction to model. Negative evaluations of clients and behaviour were positively correlated with internality and control, anger Negative evaluations of person were negatively correlated sympathy Younger staff tended to rate person and behaviour more negatively

Weigel, Langdon, Collins and O'Brien (2006)	6/7	Explores expressed emotions (EE) and attributions towards CB to investigated Weiner's (1980) Attribution Model A cross-sectional related samples design used to measure EE and attributions of staff working with one client with CB and one without.	ASQ Five-minute Speech Sample (Magana *et al.,* 1986)	15 Direct Care Staff working in either a group home or day placement facility providing activities for the group home.	**Attributions** ↑Internal attributions and ↑controllable attributions when rating behaviour of client with CB **Expressed Emotions** ↑EE when talking about client with CB More critical comments about CB client **Correlations** ↓EE more likely to rate CB as external to client ↑EE more likely to rate CB as internal to client ↓EE more likely to rate behaviour as uncontrollable by client (Z= -2.615, p = 0.009) ↑ EE more likely to rate behaviour as controllable by client.
Wilcox, Finlay and Edmunds (2006)	6/7	Explores gendered discourses in relation to aggressive CB Qualitative study using discourse analysis	Semi-structured interview 60-90 minutes analysed using discourse analysis	10 Direct Care Staff (age range = 25-58) working the residential and community day centres for people with LD Staff have worked with people with LD for between 3 and 20 years	Two main discourses **Individual pathology discourse** - constructed the behaviour as originating in factors stable and internal to the clients **Context discourse** - constructed behaviour as a response to the clients circumstances. These were flexibly used in discourses about client they could both be used to construct behaviour. **Impact of gender** Women's behaviour constructed using discourse about menstrual cycle or character flaws.

Willner and Smith (2008b)	7/8	Explores Weiner's (1980) Attribution Model of Helping Behaviour in cases of inappropriate sexual behaviour by men with LD. Vignette based, questionnaire methodology, in a 2 x 2 design with non-contact vs. intimate contact and child vs. adult with LD as victim.	ASQ 5-point Likert type scales to assess emotional response, optimism and intention to help.	65 Care Managers (median age = 38; 69% Female) and 56 Direct Care Staff (median age = 43; 57% Female) working in either a Community Support Team or residential care. All participants had some experience of working with men who display inappropriate sexual behaviour.	No support for Weiner's model. Three way significant predictors ↑Stability → ↓optimism → ↓intention to help ↑Sympathy → ↑optimism Intimate contact → ↑intention to help Care-managers→ ↑intention to help

Table 1. Studies containing factors that may affect care staff perceptions of challenging behaviour in adults with learning disabilities; key findings, methodological and demographic characteristics.

[Note: LD: Learning Disability; CB: Challenging Behaviour; SIB: Self Injurous Behaviour; ASQ: Attribution Style Questionnaire (Peterson et al., 1982); MBI: Maslach Burnout Inventory (Maslach & Jackson, 1986); LACS: Leeds Attributional Coding System (Stratton et al., 1988); SSQ: Staff Support Questionnaire; CBRQ: Challenging Behaviour Representations Questionnaire (Campbell, 2007); RET: Rational Emotive Therapy (Trower et al., 1988); GHQ: General Health Questionnaire, version 12 (Goldberg, 1972); SIBUQ: Self-injury behaviour understanding questionnaire (Oliver et al., 1996); CHABA: Challenging Behaviour Attributions Scale (Hastings, 1997); ERCB: Emotional Reactions to Challenging Behaviour Scale (Mitchell and Hastings, 1998); CBS: Controllability of Beliefs Scale (Dagnan et al., 2004); SWC-R: Shortened Way of Coping-Revised Questionnaire (Hatton and Emerson, 1994).

Discussion

This is the first systematic review drawing together the literature investigating the different factors that affect care-staff perceptions of CB in people with LD. This article aimed to provide an overview of the current literature in this area using systematic reviewing processes. It is clear from the papers included in this review that further investigation of different cognitive-behavioural models is required. Interestingly, the review process has elucidated the propensity of studies investigating perceptions of CB to explore the nature of the perceptions and then attempt to link these to resultant staff behaviour. This has usually been to assess the application of Weiner's (1980) attribution model of helping behaviour to staff working with people with LD (Dagnan et al., 1998, Wanless and Jahoda, 2002, Rose and Rose, 2005, Weigel et al., 2006, Willner and Smith, 2008b). However, there is a large amount of literature in the cognitive-behavioural literature suggesting a bidirectional link between situational perceptions and behavioural reactions (e.g. Hobbis and Sutton, 2005) and so it would seem more prudent to investigate and determine the environmental and situational factors that influence the way care-staff think about CB and the individual displaying it.

The results of this review show that there are a wide variety of factors that impact on care-staff perceptions of CB, and therefore may have an impact on their behaviour. The way in which care-staff construct their understanding of challenging behaviour displayed by an individual service user is impacted by the service user's cognitive ability (Tynan and Allen, 2002), how much training the care-staff have had (Grey et al., 2002, Dowey et al., 2007, Kalsy et al., 2007,

McGill et al., 2007, Tierney et al., 2007, Campbell and Hogg, 2008), the amount of experience the care-staff have (Hastings et al., 1997, McKenzie et al., 2004, Rose and Cleary, 2007, Willner and Smith, 2008b), the perceived function or cause of the CB (Jones and Hastings, 2003, Noone et al., 2006), the care-staff emotional reaction or emotional state (Dagnan et al., 1998, Hill and Dagnan, 2002, Rose and Rose, 2005, Weigel et al., 2006, Snow et al., 2007), the type of challenging behaviour (Heyman et al., 1998, Grey et al., 2002, Willner and Smith, 2008b) and the gender of the service-user (Wilcox et al., 2006). Of the factors above, the effect of the emotional state of the care-staff has the least consistent results. With Rose and Rose (2005) finding no primary role for stress in determining perceptions, whereas Snow et al. (2007) found significant correlations between emotional exhaustion and perceptions, therefore it is important not to over generalise the impact of care-staff emotions on perceptions. However, it can be seen that a large number of factors have been found to affect how care-staff construct their understanding of whether behaviour is challenging or not and how challenging that behaviour is. As expressed in the following quotation from a care-staff member interviewed in the literature:

> "I can run around at home and slam doors and kick things, and that is all right. But if someone with learning difficulties does that it is, 'Oh my god, they are expressing all these challenging behaviours'." (Heyman et al., 1998, pp. 170)

It is also clear that it is important to consider the way care-staff construct and understand challenging behaviour when designing and delivering training

designed to help care-staff manage behaviour more effectively. Campbell and Hogg's (2008) findings suggest that the more training staff have, the more effective it is at challenging their previous understanding of challenging behaviour. There is also evidence that short training events have significant effects on care-staff perceptions (Dowey et al., 2007). However, there was no investigation about the longevity of these changes under either condition and it would seem that the maintenance of the change would be key in designing training for care-staff.

The findings presented by McKenzie et al. (2004) that there may be changes in student nurses' causal attributions of CB during the course of their training is also noteworthy, because the changes seem to be towards a less helpful way of understanding CB. If the behaviour is aggressive or passive the final year student nurses attribute the cause to be more internal and if the behaviour is stereotypy they perceive it to be more stable. More internal attributions have been shown to decrease sympathy for the person and increase anger, and sympathy has been shown to be a predictor of helping behaviour (Dagnan and Cairns, 2005, Bailey et al., 2006). As well as this, increased attributions of stability have been suggested to decrease staff optimism for change and so helping behaviour (Willner and Smith, 2008b). Both of these changes may indicate that during their training nurses become less sympathetic and optimistic about people who display CB and it suggests that there needs to be specific training during the nurse training course that helps nurses to maintain the more helpful external and changeable attributions.

This review of the literature shows that there is a more consistent effect of factors that are internal to the staff member on their perceptions of challenging behaviour. Although in the results section these were presented in isolation from external factors, it is clear that this is merely an arbitrary distinction and external factors will impact on feelings of stress/burnout and support and the amount of negative or positive emotions felt. However, it may be easier to assess a single internal state in isolation than a single external factor, due to the amalgamation of external factors, even in rigorous experimental conditions.

Another important discussion point, which cannot be missed in an article exploring care-staff perception of CB in people with LD, is that of Weiner's (1980) attribution model of helping behaviour. A large proportion of papers included in this review, used as a theoretical basis, Weiner's model (Dagnan et al., 1998, Wanless and Jahoda, 2002, Grey et al., 2002, Jones and Hastings, 2003, Dagnan and Cairns, 2005, Rose and Rose, 2005, Bailey et al., 2006, Noone et al., 2006, Weigel et al., 2006, Kalsy et al., 2007, McGill et al., 2007, Willner and Smith, 2008b) and attempted to find a causal link between perceptions of CB, emotional reactions and helping behaviour. A brief review of these papers shows that there is little direct support for Weiner's (1980) original model in LD and CB. However, there is a consistent link between optimism for change and indicated propensity to help and so it may be that this is a more important perceptual factor than perceptions of controllability and locus in paid care-staff working with people with LD.

The above work may indicate the professionalism of care-staff, since in the care industry there appears not to be the reciprocal link between thoughts, feelings and behaviour. There are numerous factors that affect how care-staff understand and perceive challenging behaviour in service-users. However, this does not appear to affect how they react to or how much they want to help those service-users. In fact it appears as though the more severe the challenge the more willing staff are to help (Willner and Smith, 2008b). This discrepancy in thoughts and behaviour may be one reason for the high staff turnover in CB and LD services. If care-staff cannot react in the way they want to or do not feel able to talk about their perceptions of the behaviour of the service users (Jahoda and Wanless, 2005) they may become increasingly dissatisfied with the service and resentful of the service users. Without open exploration within services of the perceptions of care-staff in relation to CB, each staff member may feel isolated even within the largest of teams.

Limitations and Critique of Review

This review includes studies with a wide range of methodologies yet treats their results as equivalent. This may be seen as a weakness and warrants further discussion. There seems to be no one single research method that is consistently more prominent within the studies included. The apparent lack of controlled studies may at first glance bring into question the validity of the studies in this area, with only one study (Campbell & Hogg, 2008) using a comparative participants design to investigate the effects of a training course, whilst controlling for maturation effects. However, many of the studies used either a repeated measures design with the participants acting as their own controls or a between participant design where the difference between the

groups was of interest rather than the effect of an intervention or treatment. In the case of studies investigating the views and opinions of a specific group of individuals to a specific situation it would be inappropriate to include a control group and in many cases randomisation would also be inappropriate. In the cases in which it is the differences between the groups that is of interest (e.g. Dagnan et al., 1998) it is important to collect demographic information to ensure the groups did not differ significant on key covariates. With the use of repeated measures or within-participant designs, the participants act as their own controls or comparison group. However, in studies investigating the effect of training on the staff perceptions it would have improved validity if there were a control group as with Campbell & Hogg, 2008.

It can be seen from the above discussion that although most of the studies included in this review do not have control groups the results from the studies can be treated as equivalent, in terms of internal validity since it is the influence of specific situations or factors on staff perceptions that are of interest it can be said to be an internally valid research design. The internal validity of those studies investigating the effects of training may be bought into question, since without control groups there is the possibility that it was not the training course that caused the change. However, the results between the uncontrolled studies and Campbell & Hogg's (2008) controlled study are consistent, and so all findings are treated as equivalent.

A further criticism that could be directed at this body of work is the apparent reliance on vignettes in a large number of the studies. Perceptions of behaviour

that are made in response to reading vignettes can be said to be somewhat arbitrary and considered. This is unlike the situation of a real challenging incident, where responses are largely spontaneous and are made on the basis of knowledge of the current environment and the individual. This being said, the studies that have used 'real' incidents or videos (Wanless & Jahoda, 2002, Jones & Hastings, 2003, Bailey et al, 2006) have found similar results when testing Weiner's (1980) model, to studies using vignettes. The studies using 'real' incidents have suggested that the variable support for Weiner's (1980) model is due to the reliance on the vignette methodology. However, they are amongst the most negative when testing Weiner's (1980) model. The only study that has directly compared staff responses to real incidents, as opposed to vignettes, reported that the emotional responses and the relationships between perceptions were stronger with real incidents; in all other respects the response were similar (Wanless & Jahoda, 2002). This study had very few participants and so this may decrease the reliability of the findings, this being said, the results from this study suggest that vignettes, while somewhat inferior in strength of relationships, are still a valid method to study this problem.

As with any review that uses a systematic search strategy, this review is only as good as the search terms entered into the electronic databases to elucidate relevant articles. These terms neither want to be too narrow and so miss a multitude of studies or too vague and so result in an unwieldy number of studies. It seems as though there is the possibility that this review falls into the first category. For the terms to describe CB, this study used, but did not limit itself to, the terms included in Sohanpol et al. (2007), and for the terms for care-

staff, as many permutations as could be thought of were used. The terms for these two categories still seem sufficient. It is the terms used to describe perceptions that may have been too narrow. The terms that were used were ‘perception*’ and ‘attribution*’, it could be said that any review investigating cognitive factors should include terms such as ‘cognition*’, ‘belief*’ and ‘representation*’. It is important to consider whether the narrow search terms caused data to be missed. Without including the terms in a completely new set of searches and then re-analysing the data it is impossible to state categorically that no studies were missed. However, by hand searching the reference lists of included studies, relevant journals and similar reviews, and by contacting frequent publishers in the area, it is possible to say the every effort was made to ensure that all relevant studies were included in this review.

Conclusion

This review shows the direction of the current literature and indicates the future path of research in this area. The major research paradigm has been attempting to utilise Weiner’s (1980) Attribution Model to help to explain staff cognitive, emotional and behavioural responses to CB in the LD literature. It is clear that the support for Weiner’s original model in relation to care-staff helping behaviour in the field of LD and CB is weak at best. However, there seems to be more support for a modified version of the model that includes optimism for change as a mediating variable. There are a number of possible reasons for this lack of support. There is wide usage of vignettes in this area of literature and it has been suggested that this could make attributions of causality arbitrary and devoid of situational information that would be available when making naturalistic judgements (Willner and Smith, 2008a). There have been a number

of studies that have attempted to use ‘real’ incidents of CB to test Weiner’s model and have not found results that suggest opposite relationships to the model (Wanless and Jahoda, 2002, Bailey et al., 2006). This may suggest that vignettes are sufficient when investigating this problem. However, it is also clear that to improve the ecological validity of research in this area there needs to be further use of ‘real’ incidents.

The second possibility may be the measurement of helping behaviour. In Weiner’s (1980) original study helping behaviour was the directly observed behaviour of strangers towards the individuals in need of help. However, the most commonly used method in this area is self report measures asking staff to rate their willingness to help. Bailey et al. (2006) studied the relationship between the self-reported and actual helping behaviour; they found little evidence that these factors were associated. It seems self evident therefore that there needs to be further research in this area using either a more stringent psychometric measure of helping behaviour or by using observational methods combining casual attributions and observed behavioural responses to real incidents of CB.

The last important consideration is whether attribution theory is indeed the most appropriate theoretical perspective to use when investigating staff responses to challenging behaviour. There are a number of alternative theoretical approaches that may be useful when trying to understand staff responses to CB. For example, Williams and Rose (2007) and Campbell (2007) both suggest the possible utility of using Leventhal’s (1984) Self-Regulation Model of Illness

Perception and Willner and Smith (2008a) suggest the theory of planned behaviour (Ajzen, 1991) may be applicable to this area of research.

Further to the need to consider different theoretical models there is a need to investigate the long-term maintenance of gains in understanding from training. Results from studies on CB and LD training courses consistently show that training leads to understanding and more evidence based explanations for CB. However, there is little research on whether these post-training gains are maintained over the long term. As well as this, there is also no research in this area investigating the impact of training on improvements in service delivery or staff intervention. Weiner's model would suggest that more appropriate casual attributions would improve staff interaction with people with CB, however, the lack of robust evidence to support this model brings this supposition into question. Future research should also be targeted at investigating the links between training and subsequent changes in staff behaviour.

Interactions between staff and service-users are extremely complex and may be influenced by a number of factors. It seems clear that although there is an understanding of some of the factors that alter the quality of these interactions there is, as yet, no all-encompassing model that allow service providers and clinicians to develop theoretically based interventions that will have a consistent and predictable result of reducing CB and improving these interactions. It is therefore clear that widening the scope of research in this area to include different established models or to develop a suitable model and to use more

observational methods, may improve our understanding of these complex relationships and therefore the efficacy of our interventions.

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Part 2: Empirical Paper

Diagnostic label and care-staff perceptions of challenging behaviour in learning disability services

This paper is written in the format ready for submission to the Journal of Applied Research in Intellectual Disabilities. Please see appendix 6 for the Guideline for Authors

Summary

Background

Autism is a common diagnostic category, with an estimated prevalence in learning disability (LD) populations of 30% (Morgan et al., 2002). Autism is diagnosed by observations of behaviour and not by the description of internal processes (American Psychiatric Association, 2000).The aim of this study was to investigate how the diagnostic label ‘autism’ and the cause of the behaviour described affects care-staff’s perceptions and causal attributions about challenging behaviour (CB).

Materials and Methods

The study used a within-participant questionnaire methodology and participants comprised of thirty seven carers working in LD. The questionnaire contained vignettes that described an individual with LD or autism and describing either autism stereotypical or atypical CB. Participants were the asked to complete three measures of cognitive and emotional responses to vignettes.

Results

The behaviour of individuals with the label autism was perceived more likely to be caused by environmental stimuli and more likely to come and go periodically. If the behaviour was stereotypically autistic they felt the behaviour was more likely due to lack of stimulation than if they had a LD. Staff felt that they had more control over the behaviour of an individual with a LD rather than autism. Staff had a more evidence based understanding of behaviour of individuals with autism.

Conclusions

The label autism affects how care-staff understand CB. Care-staff may believe there are different ways to support someone with autism.

Diagnostic label and care-staff perceptions of challenging behaviour in learning disability services

Introduction

It is now over 50 years since Kanner (1943) first developed autism as a concept. Since then it has expanded and now includes a spectrum of pervasive developmental disorders with Kanner's classic Autistic Disorder at one end and Asperger's Syndrome at the other. Although there is huge variation in the presentation of people on this spectrum there has been a long standing consensus that there are common threads that join individuals on the Autistic Spectrum together, the so called triad of impairments: impairments in social communication, social interaction and social imagination (Wing and Gould, 1979). Since 1943, there have also been a large number of terms that have been used to described people linked by these common threads; autism, autistic spectrum disorder or Asperger syndrome to name a few. Within this paper the term 'Autistic Spectrum conditions' (ASC) will be used, in line with current best practice guidance (Department of Health, 2009) and is said to be widely recognised in current practice when considering diagnosis.

During the past decade epidemiological studies have reported a large increase in prevalence of ASC. Frombonne (1999), in his review suggested a median prevalence rate of 5.2/10,000, now the National Autistic Society suggest a prevalence of over 116/10,000 (Baird et al., 2006). There is also a well-researched link between an individual fitting the criteria for ASC and also having a learning disability (LD). It has been suggested that 30% of adults with an LD also fit the criteria for ASC (Morgan et al., 2002). The focus on adults with ASC

has increased calls for the development of specialist services (Department of Health, 2007, Department of Health, 2009). However, it has also been argued this development of specialist services may be a double edged sword, on the one hand improving the service provision for a small number of people, and on the other hand making a two tier service and de-skilling staff working in LD services (Collins, 2007). Due to current service provision and the prevalence of adults with both a LD and ASC, it is clear that a large number of care-staff will have to support people with ASC in LD services, the implication being that staff members may not feel as though they have the skills and knowledge to work effectively with individuals diagnosed with ASC.

There is a literature that suggests a link between diagnostic labels given to people with mental health problems or disabilities and how people, especially people in a caring role, interact with the person that is labelled (Markham and Trower, 2003). This link between diagnostic label and interactions between carers and individuals with the label was first proposed by Scheff (1966) and then further developed by Link et al. (1989). These studies used Labelling Theory (Becker, 1963) to suggest that the diagnostic label given to an individual will affect how society interacts with them, and that this will directly affect the prognosis of someone who displays socially deviant or challenging behaviour (CB, see figure 2). This research was specifically directed towards the label schizophrenia. However, it may be argued that their work can be directly applied to a larger range of care settings and groups of carers and is applicable to any minority group of people who do not comply with socially derived rules for that section of society. It seems that this work is directly applicable to adults

with ASC who live in care settings for adults with an LD rather than specialist services. It is therefore, important to investigate any impact that the label of ASC or autism has on the ideas that care-staff have about CB.

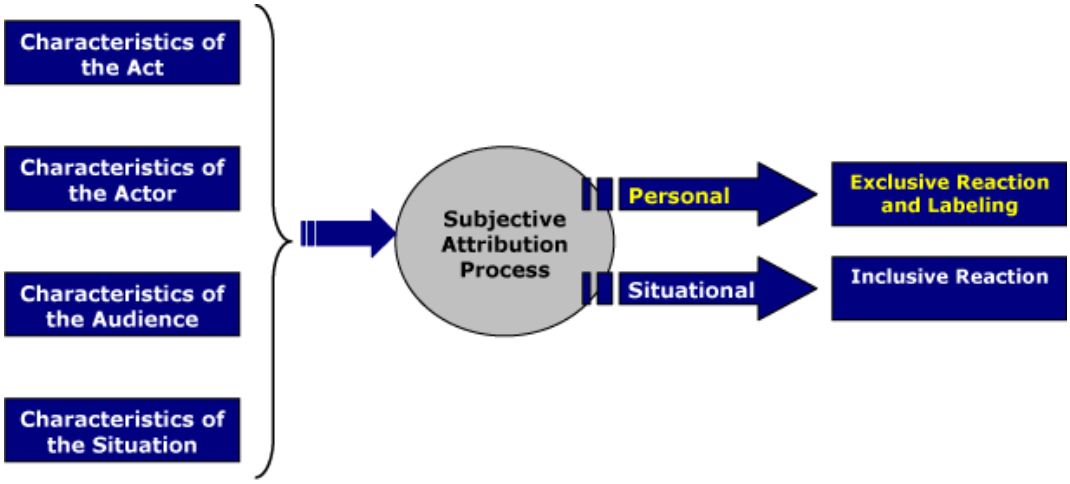

Figure 2. Diagrammatic representation of Labelling Theory and Audience Response (adapted from Orcutt, 2002).

The dominant paradigm for investigating staff perceptions of CB in LD research is Weiner's (1980) Attributional Theory of Helping Behaviour, which states that the cognitive appraisal made about a person and their behaviour, will affect feelings about the situation and this will also affect our willingness to help that person. These cognitive appraisals, Weiner suggested, are on the three dimensions of cause of the behaviour being appraised; that people make attributions of locus of cause (internal – external), stability of cause (unstable – stable) and controllability of cause. Attributions of internal and controllable cause will cause negative emotions and so less helping behaviour. This theory has been joined with behavioural models of reinforcement, in LD research, to suggest and attempt to show a pathway through which factors affecting the attributions staff make about an individual or a behaviour may lead to them acting in ways that reinforce challenging behaviour (e.g. Dagnan et al., 1998, Allen, 1999, Stanley and Standen, 2000, Dagnan and Cairns, 2005, Snow et al.,

2007). This paradigm has also been used to investigate the effect of psychiatric diagnostic labels on staff attributions of behaviour (Markham and Trower, 2003).

Previous studies have found inconsistent support for the applicability of Weiner's (1980) theory to the helping behaviour of paid carers. Studies investigating this relationship with care-staff working in LD services are unable to show a direct causal link between cognitive appraisal and helping behaviour via emotions. There have been a few studies that have shown this link but there are equally as many that have been unable to show this link (see Willner and Smith, 2008 for review). It has been proposed that this inconsistency may be due to the use of vignettes instead of so called 'real' incidents of challenging behaviour. Wanless and Jahoda (2002) found that there was no difference between the attributional scores of vignettes when compared to 'real' incidents, although Lucas and colleagues (Lucas et al., 2009) found that there was more support for Weiner's (1980) model when using 'real' incidents as opposed to vignettes. This was also supported by a recent review of studies using Attribution theory in relation to staff understanding of CB in LD (Willner and Smith, 2008). However, Willner and Smith (2008) also emphasised that the inconsistent support for Attribution Theory may be due to limited usefulness of using it in relation to paid care-staff and suggested the need to investigate this area using alternative models (Willner and Smith, 2008)

Williams and Rose (2007) and Campbell (2007) have suggested the use of Leventhal's (1984) Self-Regulation Model of Illness Representation. This Self-Regulation Model suggests that illness representations (cognitive responses) of

symptoms and an illness will have a direct influence on the emotional response to the illness (Leventhal and Diefenbach, 1991). This model predicts that the cognitive representations of the illness are directly related to coping behaviour and will have a direct influence on an individual's outcomes, which influences their perceptions of quality of life. Williams and Rose (2007) and Campbell (2007) based their suggestion that the Self-Regulation Model may be applicable to care-staff working with people with learning disabilities on work by Barrowclough et al. (2001). They used the Illness Perception Questionnaire, which is based on the Self-Regulation Model to investigate the applicability of using Leventhal's (1984) model to look at the factors that influence how carers' respond to someone with schizophrenia. Williams and Rose (2007) and Campbell (2007) suggested that this model may be applicable in helping us understand staff perceptions and cognitive representations of CB in people with LD.

The aims of this study were to investigate the labelling effects of the term autism on the perceptions of care-staff, working in LD services and to investigate whether there is any effect of the type of behaviour described on the staff perceptions of CB.

Hypotheses:

It was hypothesised that there would be labelling effects of the term autism on perceptions of CB, and further to this it was hypothesised that these effects would be independent of the type of behaviour described. Due to the current study being exploratory in nature it was not possible to make a definitive 1-tailed

hypothesis. However, it was hypothesised that if an individual is labelled with autism, it would be the autism that is used as an explanation for the cause of any CB. At this time it is not possible to say whether 'autism' will be seen as external or internal, controllable or uncontrollable, or have a chronic or acute timeline.

Materials and Methods

Participants

Demographic		N	Mean	SD
Age			38.46 years	13.29 years
Gender				
	Male	11		
	Female	26		
Job Title				
	Direct care staff	18		
	Senior care staff	6		
	Manager/Team Leader	5		
	Nursing staff	4		
	Nursing assistant	4		
Number of years working in learning disability services			7.88 years	6.45 years
Place of work				
	NHS Inpatient Unit	8		
	Local Authority Residential	6		
	Private Residential	21		
Time in current post			3.93 years	4.08 years
Perceived experience				
	Learning disabilities		4.16	0.9
	Autism		3.21	1.2
	Challenging behaviour		3.92	0.95
Percieved Stress			12.73	5.53

Table 2. Demographic information for participants

Thirty-seven direct care-staff (71% female) working within an NHS inpatient unit and residential care homes for adults with learning disabilities were recruited within Hull and The East Riding of Yorkshire (see procedure for full description of recruitment and sampling). The mean age of participants was 38 years (SD =

13.42 years, Range = 22 years – 59 years). The mean time spent working as direct care-staff with adults with learning disabilities was 7 years 11 months (SD = 6 years 6 months, range = 6 months – 22 years), with the mean time in current post being 3 years 11 months (SD = 4 years 2 months, range = 2 months – 15 years). Full demographic data are presented in table 2.

Materials

The study used vignettes that described an individual with autism/LD and CB; these were based on vignettes previously used by Tynan and Allen (2002). These vignettes were adapted to describe an individual with autism or LD engaging in behaviour that may be challenging. They were also adapted so that the second condition of cause of behaviour could be investigated. Challenging behaviour was either stereotypical or atypical autistic behaviour. The terms stereotypical and atypical autistic behaviour are used, for brevity, to describe behaviour that would be perceived as either behaviour that is typical of someone with ASC or not. The vignettes were adapted by the author and then reviewed by professionals in the local area who in particular considered closely the descriptions of stereotypical and atypical behaviour, the vignettes are presented below:

- Autistic/stereotypical vignette: William is a young man who has Autism. He lives in residential supported living accommodation. He requires 24 hour support from staff. William has to have everything in order and will line objects up and becomes very distressed if things are not in order. If people mess things up he will kick and punch people, or damage property. Sometimes this prevents William being included in activities.

- Autistic/atypical vignette: William is a young man who has Autism. He lives in residential supported living accommodation. He requires 24 hour support from staff. William likes to mess everything up and will smear food all over him self. If people try to tidy things up he will kick and punch people, or damage property. Sometimes this prevents William being included in activities.
- Learning Disability/stereotypical vignette: William is a young man who has a Learning Disability. He lives in residential supported living accommodation. He requires 24 hour support from staff. William has to have everything in order and will line objects up and becomes very distressed if things are not in order. If people mess things up he will kick and punch people, or damage property. Sometimes this prevents William being included in activities.
- Learning Disability/atypical vignette: William is a young man who has a Learning Disability. He lives in residential supported living accommodation. He requires 24 hour support from staff. William likes to mess everything up and will smear food all over himself. If people try to tidy things up he will kick and punch people, or damage property. Sometimes this prevents William being included in activities.

Information gathered from participants

Participants were asked to provide demographic information, which covered details about their age, gender, length of time working in learning disability services and the length of time in their current post, the type of place of work and their perceived experience working with autism, learning disabilities and

challenging behaviour (see appendix 10 for the demographic information sheet). Participants also completed the Perceived Stress Scale (PSS-10, Cohen et al., 1983, Appendix 11). The PSS-10 is said to be a reliable and validity global measure of stress. This data was used as background information for the study and as covariates during the analysis of the perceptions of CB.

Measures

Challenging Behaviour Attribution Scale (CHABA, Hastings, 1997)

This questionnaire was designed to elicit the causal beliefs of staff in response to challenging behaviour. It has been previously used in research investigating staff attributions towards CB (Tynan and Allen, 2002, Bailey et al., 2006, Tierney et al., 2007). The CHABA consists of 33 items, each stating a possible reason as to why individuals with LD may engage in CB. It consists of seven subscales, which link perceived causes of the behaviour; learned, learned positive; learned negative; biomedical; emotional; stimulation; physical environment. The internal consistency of the subscales is said to be moderate to good, with the Cronbach's alpha coefficients ranging from 0.65 to 0.87 (Hastings, 1997).

Participants are asked to rate each of the 33 items on a 5-point scale (-2 = very unlikely, 2 = very likely) of how likely it is that the person described in the vignette engaged in the behaviour described for the reason contained in each item. The causal statements within the scale were modified to relate to the individual portrayed in the vignettes used in the present study.

Challenging Behaviour Perception Questionnaire (CBPQ, Williams and Rose, 2007)

This questionnaire was designed to elicit the perceptions that staff hold about challenging behaviour. The CBPQ is a 19-item questionnaire which was developed from an adapted version of the Illness Perception Questionnaire (IPQ, Weinman et al., 1996) and so the six subscales within the CBPQ are closely related to the domains within the IPQ. The six subscales are: consequences for client (negative results of the challenging behaviour for the person in the vignette); consequences for carer (negative results of the behaviour for the person caring for the person in the vignette); control for carer (whether the carer perceives to be able to control or cure the behaviour); timeline chronic/acute (whether the behaviour is perceived to be long term or short term); timeline episodic (whether the behaviour is seen to come and go i.e. times of lots of CB and times of none); emotional representation (any negative emotional reaction to the behaviour). The internal consistency for this scale has been found to be moderate to good, with Cronbach's alpha coefficients ranging from 0.58 to 0.79 (Williams and Rose, 2007).

Participants are asked to rate each of the 19 items on a 5-point scale (1 = strongly disagree, 5 = strongly agree) with regard to how much they agree that the statement applies to the person described in the vignette.

Challenging Behaviour Representation Questionnaire (CBRQ, Campbell, 2007)

The CBRQ was used to elicit staff's cognitive representations of CB and also as a means of evaluating staff views associated with good evidence-based

practice. The CBRQ is a theoretically driven questionnaire giving an overall score and subscale scores of Identity (whether certain behaviour is perceived as challenging); Cause (the perceived cause of the behaviour); Consequences (the negative results of the behaviour for the person described in the vignette); Emotional Reaction and (the negative emotional reaction to the behaviour) and Treatment/Control (the perceived intervention options for the behaviour). Campbell (2007) states that the scale has acceptable levels of internal and test-retest reliability. The CBRQ was also developed based on the dimensions used on Weinman's (1996) IPQ as well as the causal models proposed in the CHABA.

The CBRQ is a 40-item questionnaire where participants are asked to rate on a 5-point scale (-2 = strongly agree, +2 = strongly disagree) whether they agree with the statement about the individual in the vignette.

Procedure

Prior to commencing this study ethical approval was sought and gained from the Hull and East Riding Local Ethics Committee. Following the receipt of ethical approval, an NHS learning disability inpatient unit and all the learning disability residential services within the East Riding of Yorkshire were identified and the service managers were contacted by letter to invite their care-staff to participate in the study. This letter was followed up with a telephone call to the service manager. Once the service manager had agreed, in principle, to the research, information forms were circulated to the staff for them to consider participation in the research. The service manager was contacted again via telephone to arrange a date for a meeting to discuss the research with staff

members; a further meeting was arranged with the service manager and staff to collect data. Data were collected from staff at work on the arranged date; subsequent meetings were arranged with service managers of further staff members that wished to participate. Data was collected from all members of staff wishing to participate, all staff wishing to participate fulfilled the inclusion and exclusion criteria and so no potential participants were excluded. At each meeting participants were given a further opportunity to read the research information sheet, ask questions and then give their consent (see appendix 9 for information sheet and consent form). The participants then completed the demographic information sheet and the PSS-10 (Cohen et al., 1983).

The research design incorporated a two factor repeated measure. Participants first read one of the four vignettes and then completed measures regarding the vignette they had just read. They were then presented with the next vignette and measures and so on until they had completed the measures for all four vignettes. Presentation of the vignettes was counterbalanced, using the Latin square method, to control for any possible order effect. Each participant took between approximately 45 minutes and 75 minutes to complete the task.

Staff completed measures taken from Williams and Rose (2007), Campbell (2007) and Hastings (1997). These measures were chosen as they were developed to measure causal attributions, Leventhal's (1984) illness representation dimensions, and they allow for the identification of the possible causes of CB, and measurement of participants emotional responses, and

finally they provide a measure of participants' evaluations of both the behaviour and the person enacting the behaviour.

Inclusion and Exclusion criteria

The care-staff had to be English speaking, as the vignettes and questionnaires were in English, they had to have worked in learning disability services for at least six months and they had to be adults over the age of 18 years old.

Data preparation and statistical analysis

All the data were inspected for departures from normality through visual inspection of histograms and the calculation of kurtosis and skewness statistics. The data were normally distributed and so the use of parametric analysis was indicated. Data were analysed using a 2x2 repeated measures analysis of variance with the variables being diagnostic label, autism or learning disability and behaviour described, autism stereotypical or autism atypical. This allowed for the investigation of the main effects of label or behaviour as well as identification of any interaction these variables may have had. The data were also analysed for any interaction with workplace, perceived stress (PSS-10 score) and experience of working with challenging behaviour and autism.

Sample size and power calculation

Sample size calculations could only be completed for the affect of type of behaviour on CHABA subscale scores. The CHABA has not been used to assess the effect of label on causal attributions and so predictions regarding mean variances where unavailable. The CBPQ and the CBRQ are new measures and so no data were available regarding the mean variances expected when using these measures. Data reported in Hastings (1997), Table

2 were used as a basis for the calculation of sample size. Statistics reported in Hastings (1997) for aggression were used as a guide for responses that might be expected on the CHABA for autism atypical vignettes; and those reported for stereotypy were used as a guide for responses that may be expected for the autism stereotypical vignettes.

The Power and Sample Size Statistical software (Hintze, 2001) was used to estimate the sample size required to avoid Type II error. A within-participant correlation of 0.5 was assumed when performing the calculations. The mean of the standard deviations for the CHABA subscales in Hastings (1997) was 0.54 and is assumed for the between-participant standard deviation on CHABA subscales for the vignettes mentioned above.

Based on these assumed figures and the use of repeated measures ANOVA for each subscale to compare the independent variable means, it was found that for 80% power and using a 5% significance level, that 17, nine and 14 participants are needed for the Biomedical, Learned Behaviour and Emotional subscales, respectively.

These sample size estimates were taken as a rough guide due to the limitations within the calculations. However, due to the study using a within-participant design this reduces the confounding variables and in effect increases the sample size by the total number of levels within the independent variables (i.e. four). Although these calculations are rough guides, they suggest that the sample size of 37 participants should be adequate to avoid type II error.

Results

Measure/subscale	Client with Autism				Client with LD			
	Autism stereotypical Behaviour		Autism atypical behaviour		Autism stereotypical Behaviour		Autism atypical behaviour	
	Mean	St Dev	Mean	St Dev	Mean	St Dev	Mean	St Dev
CHABA								
Learned Behaviour	0.66	0.76	0.68	0.60	0.66	0.57	0.75	0.44
Learned Behaviour - Positive	0.80	0.84	0.77	0.59	0.76	0.58	0.84	0.45
Learned Behaviour - Negative	0.43	0.71	0.54	0.89	0.46	0.67	0.58	0.49
Biomedical Cause	0.44	0.54	0.47	0.65	0.45	0.53	0.46	0.59
Emotional Cause	0.88	0.60	0.87	0.53	0.83	0.55	0.86	0.52
Physical Environmental*	0.42	0.56	0.44	0.66	0.26	0.62	0.36	0.61
Stimulation**	0.48	0.56	0.41	0.62	0.41	0.56	0.55	0.51
CBPQ								
Consequences for Client	3.14	0.33	3.18	0.39	3.07	0.33	3.08	0.34
Consequences for Carer	2.46	0.76	2.44	0.79	2.50	0.62	2.38	0.84
Control by Carer*	3.47	0.59	3.54	0.78	3.77	0.62	3.72	0.51
Timeline - Chronic/Acute	3.42	0.85	3.58	0.78	3.39	0.65	3.29	0.71
Timeline - Episodic*	4.12	0.49	4.10	0.51	4.07	0.47	3.99	0.53
Emotional Representation	2.36	0.63	2.37	0.41	2.40	0.50	2.21	0.50
CBRQ								
Identity	1.38	4.46	1.95	4.62	1.03	4.53	0.57	4.56
Cause*	5.59	3.62	4.35	3.58	3.86	4.15	3.27	3.73
Consequence	0.04	3.19	0.00	3.47	0.30	3.67	0.16	2.86
Emotional Reaction	9.59	4.65	9.38	3.81	9.78	3.92	9.57	4.02
Treatment/Control	10.59	3.24	9.97	3.34	10.11	3.47	9.73	3.63

Table 3. Mean and standard deviation subscale scores for each condition.
*Main effect of diagnostic label $P \leq 0.05$, **significant interaction effect $P \leq 0.05$.

Effect of Diagnostic Label or Type of Behaviour on Care-staff Perceptions

A series of two-way within-participant ANOVAs were undertaken to assess whether the independent variables diagnostic label (autism or learning disability only) or type of behaviour (autism stereotypical behaviour or autism typical behaviour) had an effect on the dependent variables (CHABA, CBPQ, CBRQ) or whether there was an interaction effect on the dependent variables. The level of significance was set at $p \leq 0.05$. There was no need to use any *post* hoc analysis methods due to there being only two levels in each independent variable, therefore, any main effect can be said to be due to the variance in the means between these levels. The mean attribution and perception ratings and

standard deviations with regard to each diagnostic label and type of behaviour are displayed in Table 3.

Challenging Behaviour Attributions Scale

Higher numbers represent greater likelihood that the subscale can explain the cause of the behaviour. Comparison between the label conditions revealed that care-staff thought that the physical environment has more effect on a client with autism ($F_{1,36}$ = 6.975, P = 0.012). There were no other significant main effects of label and there were no significant main effects of the type of behaviour described. However, on the stimulation subscale there is a significant interaction between the label and behaviour. Specifically the staff rated it more likely that the client was using challenging behaviour to gain stimulation if that client had the label autism and was displaying autism stereotypical behaviour or the client was labelled learning disabled and was displaying autism atypical behaviour ($F_{1,36}$ = 4.338, P = 0.044). There were no other significant interactions.

Challenging Behaviour Perceptions Questionnaire

Higher numbers represent greater agreement with the statements in each subscale. Comparison between label conditions on the CBPQ revealed that care-staff feel more in control of the cause of the behaviour when working with someone with a LD as opposed to autism ($F_{1,36}$ = 8.771, P = 0.005) and care-staff felt that the CB displayed by someone with autism is more episodic, i.e. there may be periods of lots of CB and periods of improvement, than someone with an LD ($F_{1,36}$ = 5.366, P = 0.026). There were no other effects of the label on perceptions of the care-staff and the type of behaviour had no effects on the

scores endorsed for any of the subscale. There were also no significant interaction effects.

Challenging Behaviour Representation Questionnaire

Higher scores represent staff views that are in line with current evidence-based practice and disagreement with the statements presented in the questionnaire. Investigation of the scores given on this questionnaire indicate that care-staff have a more positive, evidence-based understanding of the possible causes of challenging behaviour of a client with autism when compared to a client with an LD ($F_{1,36}$ = 9.399, P = 0.004). There were no other significant effects of label or type of behaviour, and there were no significant interactions.

Interaction with Demographic Information

The data were further analysed to investigate the impact of the type of work place (as suggested by Weigel et al., 2006), the perceived experience working with Autism or CB, and the amount of stress the care-staff were feeling (as suggested in Rose and Rose, 2005), using a repeated measures analysis of covariance. This was conducted separately to the above repeated measures ANOVA due to the argument by Thomas et al. (2009) that this produces the most meaningful analysis main effects of within-subject variables and interaction with covariates. On the majority of the subscales there were no significant interactions between the scores given and the covariates described above. There were significant interactions between diagnostic label and level of experience of CB on the Control for Carer subscale of the CBPQ ($F_{1, 31}$ = 6.37, P = 0.017) and the Emotional Reaction subscale of the CBRQ ($F_{1, 31}$ = 5.03, P = 0.032), between the type of behaviour and experience of working with autism on

the Emotional cause subscale of the CHABA ($F_{1, 31} = 4.96$, $P = 0.033$) and the Consequences for Carer on the CBPQ ($F_{1, 31} = 9.143$, $P = 0.005$), and finally between the type of behaviour and the score of the stress scale on the Environmental Cause subscale of the CHABA ($F_{1, 31} = 13.69$, $P = 0.001$).

Discussion

The main aim of this study was to investigate how the diagnostic label 'autism' affected staff's perceptions of CB. The study utilised a within-participants questionnaire methodology and participants comprised care-staff within local authority and private residential, and NHS inpatient services for people with LD.

Staff Casual Attributions

The hypothesis that care-staff would attribute the cause of behaviour differently was assessed using the CHABA (Hastings, 1997). Care-staff were significantly more likely to attribute the cause of the behaviour to the physical environment when the individual has an ASC. This suggests that care-staff believe that a person with ASC is more affected by their environment than someone with an LD. This may be explained by the idea that people with ASC benefit from routine and regularity, which is often cited as a useful intervention for people with ASC (Harker and King, 2004). However, it is also clear in clinical practice that people with an LD and no ASC also benefit from a routine for day-to-day living and can behave in challenging ways when their environment is chaotic.

When investigating the results from the CHABA, there was one other significant finding, which was the interaction between diagnostic label and behaviour on the stimulation scale. This shows that when someone is labelled as autistic and

the behaviour is stereotypically autistic, staff believed the cause of the behaviour to be lack of stimulation. However, when the conditions are reversed so are the staff beliefs about the causal attributes. This interaction suggests that staff believe that when an individual with ASC behaves in stereotypically autistic ways, the more likely challenging behaviour is caused because the person lacks stimulation. The items that correspond to this subscale seem to be closely related to external environmental factors, which supports the above finding that staff believe that the external environment has a greater impact on someone with ASC.

In relation to Weiner's (1980) Attribution Model, the main effect for physical environment having a greater effect on a person with ASC seems to suggest that staff attribute the causes for CB in people with ASC to external i.e. environmental, rather than internal factors. The physical environment subscale contains items that seem to be out of the described person's control, which also relates to the controllability dimension of Weiner's model. This implies, in Weiner's terminology, that when someone is diagnosed with an ASC care-staff attribute the causes of any challenging behaviour to external and uncontrollable factors. When considering the interaction effect on the stimulation subscale through Weiner's model, it seems that care-staff believe that when the behaviour is stereotypically autistic and the person is also diagnosed with an ASC the cause is also more likely to be due to external factor's that are outside of their control. This is seen by the items endorsed for this subscale i.e. "Item 25 – Because he gets left on his own, Item 29 - Because people do not talk to him very much" (Hastings, 1997, pp. 498). From the results of this study it is not

possible to directly link these results to the emotional reactions of the staff and then to their resultant behaviour. However, Weiner's model would suggest that due to the cause of the challenging behaviour being attributed to external and uncontrollable causes then care staff would be more likely to help a person with ASC more than a person with an LD, especially when the person with ASC is behaving in ways which are stereotypically autistic.

Staff cognitive representations

The care-staff cognitive representations of the challenging behaviour were measured on the CBPQ and the CBRQ. Care-staff significantly perceived that they had control over the challenging behaviour of someone with ASC, that the timeline or course of the challenging behaviour would be more episodic in someone with ASC, and finally the care-staff held significantly different perceptions about the causes of the challenging behaviour on the CBRQ, this was more likely to be related to current evidence in someone with ASC. These effects were apparent regardless of the nature of the behaviour described. On first appraisal, these results seem to suggest that the staff in this study may have a more evidence based understanding of challenging behaviour in people with ASC. Further to this, although there is no way to assess this link directly, it may be that this evidence based understanding of CB in ASC gives care-staff feelings of more control and the understanding that there may be cycles of increased CB and times of less CB. However, it is important to note that this study did not investigate causal links between scores on subscales of different questionnaires.

The above questionnaires were both based on Leventhal's (1984) Self-Regulation Model of Illness Perceptions and so it is important to consider the possible meaning of these results in relation to this model. There have been few studies in the area of LD attempting to use this model to explain care-staff perceptions and responses. This model has been used to attempt to explain relative outcomes in enduring mental health problems and so the results from the current study will be considered alongside findings from studies applying the self-regulation model to relatives caring for people with enduring mental health problems (for a review, see: Lobban et al. 2003). Higher scores on the control-by-relatives subscale of the modified IPQ has been shown to be associated with increased feelings of burden by the relatives (Maurin and Boyd, 1990). This may have implications for care-staff working with people with LD, who may believe they are in more control of the CB and so may feel more burdened by the responsibility for by able to control the CB and how often it happens. Barrowclough et al. (2001) found that high levels of perceived control of their illness by the patient was related to less positive feelings towards the patient by the carers. If this correlation was applied to the present study, it may mean that care-staff working with an individual with LD perceive that they have greater control over CB, and hence will feel more positive towards that individual.

Onwumere et al. (2008) found a weak association between scores on the episodic timeline scale and distress in carers of people with a psychotic illness. In the present study, it was found that care-staff believe that the CB of an individual with ASC will have an episodic timeline; this means the behaviour is likely to appear and disappear periodically. Taken with the above findings of

Onwumere et al. (2008), it may suggest that staff may feel more distressed when working with an individual with ASC and CB, although this was not shown by the emotional reaction scales. It may be that the care-staff feel less hopeful about the possibility that the CB will be controlled permanently and that there will always be times when a person with ASC is challenging, caused by factors outside of the staff members' control.

Lobban et al. (2003) suggest that the cause dimension of the self-regulation model links directly with the Weiner's (1980) causal dimensions and so it is not surprising that there are significant differences in the attributions of cause shown by the CBRQ due to the differences in causal attribution that are also present on the CHABA. The specific differences in causal attribution are not detected by this scale, however, higher scores are linked to more evidence-based practice and so may use more behavioural explanations to explain the CB, as opposed to personality-based explanations for the CB in someone with ASC.

Interaction with Demographics

It is worth noting that there were significant interactions between some of the demographic information collected and the dependent variables. By controlling for the assumed variance caused by these covariates, there are significant differences in the ways that the care-staff perceive the behaviour of the individual described in the vignettes, as explained below.

By controlling for care-staff experience of CB, there is a stronger effect of diagnostic label on the amount of control the staff perceived over the behaviour

increased. This may suggest that care-staff with more experience of CB, believe that they have more control over the behaviour of someone diagnosed with ASC as opposed to the behaviour of someone with a LD. There was also a significant effect of experience of CB on the effect of diagnostic label on the Emotional Reaction subscale; it seems as though care-staff with less experience of CB have more positive emotional reaction to the CB of someone with an LD as opposed to someone with ASC. This may suggest that the more experience of CB staff have the less negative emotions they report when thinking about an incident of CB.

There were also significant effects of the experience of ASD on the effect of type of behaviour on the Emotional Cause and Consequences for Carer. There were no significant main effects of type of behaviour on these subscales without controlling for the covariates. This increases the effect of the type of behaviour on how care-staff perceive the consequences for themselves. They perceive that there are more consequences for them if the behaviour is stereotypically autistic. The effect on the Emotional Cause subscale may indicate that care-staff with more experience of ASC may believe that atypical autistic behaviour is more likely to be caused by emotional factors than stereotypical behaviour.

The final effect was an increased effect of the type of behaviour caused by controlling for the perceived stress. This is consistent with previous research that suggested that staff stress may have a role in care-staff perceptions of CB (e.g. Snow et al., 2007, Willner and Smith, 2008). However, Rose and Rose (2005) found little support for the overall role of stress in determining staff

attributions of CB and their emotional response to CB. They did suggest a circular relationship between scores on an emotional exhaustion scale and negative emotion, highlighting the difficulty of attempting to suggest the causal effect of an emotion on a cognitive-emotional process.

Methodology and research limitations

The use of vignettes to study staff reactions to CB has been criticised for the lack of ecological validity and has been suggested as a possible reason for the lack of support for Weiner's (1985) model (Wanless and Jahoda, 2002). Whilst vignettes allow for the manipulation of desired variables in a controlled and standardised manner between conditions, there will inevitably be a lack of richness of detail that comes from real interpersonal interactions. It is suggested judgements made regarding 'real' incidents of CB are made using knowledge about the individual involved and the environment at that time, however, when making judgements about vignette, this decision making process becomes more arbitrary (Willner and Smith, 2008). This arbitrary decision-making process may differ between participants, each using different and uncontrolled information for making their decisions. There has only been one study that has compared the use of vignettes to real incidents of CB within the LD literature (Wanless and Jahoda, 2002), which reported that the emotional reaction to the real incident was stronger and the relationships between the attribution dimensions were also stronger. Other than these stronger results, the responses to the vignettes and real incidents appeared not to have any significant differences in the direction and pattern of the correlations between emotions and attribution dimensions. This suggests that, although vignettes are inferior to real incidents, they may still be a useful way to manipulate variables

to investigate staff perceptions of CB. It was felt that, due to the literature base using vignettes in this area and the comparable findings of studies using real incidents, the methodological difficulties of using real incidents outweighed the benefits. It is also noted that the study was concerned with stereotypical beliefs about people with autism and hence in using real situations the participants may have drawn upon further contextual information.

As well as the potential increase in validity by using real incidents when investigating staff responses to CB, video simulations of CB have also been used, although these were not compared to either real incidents or vignettes for their validity. However, the use of videos for this study was incompatible with the within-participant design, due to the need to manipulate diagnostic label (i.e. there are no physical markers for autism or LD. There would also be the need to manipulate this variable via physically labelling each video subject, which would require either four separate videos (each matched), or would have required a mixed or between-participant design (therefore losing the added statistical power of the within-participant design and so requiring an unrealistically large number of participants).

By using a within-participant design many of the confounding variables were controlled. However, participants were aware that they were being asked to respond with regard to two differently diagnosed individuals and so the staff may have been inclined to answer consistently across all the vignettes. It was therefore important to note that the research stressed the interest in the participants views towards the individual described in the vignette and that due

to the research being confidential there would be no negative consequences for staff regardless of any answer they gave. There was also an attempt to control for this possible bias, which was presenting each vignette separately (so not allowing cross-checking of the information in the vignettes). It is nonetheless recognised that there is a need for between-participant designs, observational and qualitative methodologies, if we are to assess the validity of the findings from this present study.

A further methodological limitation with this study may be the number of dependent variables the effects were tested against. This may increase the chance of a type I error, however, the scales used were chosen prior to data collection. They measure perceptions of CB in different ways and use different theoretical models as the basis for the measures. The number of dependent variables is not unusual for this field with a number of studies using a similar number of dependent variables to measure outcomes (e.g. Wanless & Jahoda, 2002, Rose & Rose, 2005). However, it should be noted that following this study further research investigating the impact of the label autism on perceptions should be more focused and use a smaller number of dependent variables to test the hypotheses.

Conclusions

Taking the results in their entirety they seem to show that there are indeed differences in the way in which care-staff understand CB when someone is diagnosed with ASC. It is not possible from these results to say whether these cognitive appraisals would impact on care-staff behaviour in response to CB. It is only possible to propose that if the current cognitive-behavioural models

stand true then how the care-staff think about this behaviour will have an impact on how they react to it. Whether this reaction is negatively or positively different is impossible to say. The inability to link these differences in perceptions to the behaviour of care-staff is a weakness of the current study and should be the focus of future studies in this area. There are many practical problems with the assessment of impact of perceptions on care-staff behaviour. Previous studies have used one Likert scale to assess willingness to help (e.g. Dagnan et al., 1998) and this seems to have little ecological validity. It would seem that future research in this area may need to consider different methodologies to investigate the impact of cognitive and emotional factors on care-staff behaviour. This would seem especially important when considering the impact of adult diagnosis of ASC on care-staff perceptions. This would then affect the debate regarding the need to diagnose adults suspected of having ASC or not.

The result that care-staff perceive that the environment has a greater impact on the behaviour of someone with ASC may mean that care-staff are more likely to use this as an explanation for the behaviour and so may not perceive it in a way in which the person becomes the target of blame. Collins (2007) proposed the possibility of a two tier care service, a premier service for people with ASC and CB based on research developments in individualisation and behavioural functional analysis, and a secondary service for people with LD and CB, based on a different set of research evidence. This study may support this assertion, that care-staff perceive there to be a different formula to supporting someone with a LD and CB and someone with ASC and CB. However, it is clear that the specialist interventions that help people with ASC, such as the Picture

Exchange Communication System (PECS), can equally be applied when helping someone with an LD communicate with staff. However, this study does not seem to support Collins (2007) proposal that the development of special ASC services may in fact deskill staff working in LD services when they have to work with people with ASC. The results from this study also point to the need to compare the attitudes of people working within specialist services with those care-staff in LD services, to assess whether there is a two tier service provision occurring and if there are different perceptions of CB in the different services it would then be important to study the applicability of the training and behavioural management policies across the two types of services.

The results seem to suggest that staff have a more evidence-based understanding of the causes of CB in ASC and they are more able to acknowledge the importance of a person's environment in the function of CB. This may be an unexpected result and so it is important that future research investigates the development of these perceptions and the meaning of these results on care-staff. This study is an important starting point for the consideration of the how diagnosing an adult with ASC affects their experience of services, however, it is clear that this is the starting point with future research exploring the fine grained detail of the meaning of the differences in perceptions.

The results of this study suggest that LD services need to help staff understand the transferability of the skills learnt on different training programmes and the

support to give staff the confidence to apply what works with someone with one diagnostic label to someone with a different diagnostic label.

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Part 3: Appendices

Appendix 1 - Reflective Statement

During any time of a sustained, highly intensive, research project it is a natural defence to imagine that magical time when the project is completed, and how life will be a lot better once it has finished. Without having to focus on what is needed to get there and the reality of ending something that has become a major part of your life for the past three years. There is also a tendency to defend against seeing the project as a whole, but more separate milestones that have to be passed on the way to completion. It is only once one has finished the marathon that each and every mile can be recalled and integrated into an overall picture. It is therefore important for personal development to take time to process and integrate this project as a whole and this can only be done fully once the finishing line has come and gone, you have the medal, the goody bag and are wrapped up in the space blanket. Unfortunately, it is not possible to wait until the actual finishing line after the viva voce and the confirmation of the degree. However, it does feel as though the last mile is just round the corner and the crowds will carry me through this and across the line, so it is appropriate to begin to reflect on the process as a whole, up until this point before the actual finishing line is crossed.

The guide given for this reflective statement suggests some questions to consider when writing it. It would seem like a good place to start with some answers to these questions.

It seems, when looking back three years to the first research teaching day we had, back in the first term of clinical psychology training, that although I had

already done two small research projects as part of my two undergraduate degrees, the idea of independently formulating and completing my own doctoral level research was hugely scary. We all know that undergraduate research is pretty much given to you as a paint by numbers project and as long as you stay within the lines you will be able to pass. This doctoral thesis is a whole different ball game. I had to come up with a topic that hadn't been looked at before, formulate questions and hypotheses, design the study and then conduct it. Wow, that felt like a massive ask, back in year one.

I think I have learnt that I really did approach this intellectual challenge like you may approach a physical challenge. Stepping out on to the road, one foot in front of another and just putting the miles in the bank. As with physical training it was very difficult to start but as the stages have passed and the big day approached it become easier and easier and more comfortable to think in the way that is required; that research is exciting and can really help people in the 'real' world. On reflection there have been times during this project when I have not taken enough time to reflect on the information being investigated and so have not always had a fully integrated view of the background to the research. In that respect when I start my next piece of research I will try harder to give myself an integrated overview of the theoretical and political perspectives underlying the research.

This might also be advice I would give to people starting on this marathon now. It is important to spend time gaining a clear understanding and be able to clearly verbalise the theoretical, clinical and political importance of the research

you are about to undertake. Too often so called scientists can undertake research for an abstract reason; through my clinical and research work it has become clear that the research that academics do, especially social scientists, must be applicable to the real world, and should be for the attempt to improve the lot of society as a whole. Abstract research in science is good, but only if it generates debate and creates a culture of greater understanding.

I would also say to anyone embarking on research that they should understand epistemology theory before beginning the design of the project. It may be one of my greatest regrets about my research that I chose to do quantitative research, which has given some very interesting results, but maybe not the richness of detail, and understanding that may have stemmed from a qualitative project. Anyone starting a project, I feel, should develop the research questions and then from them follow the epistemology to the design, not the other way round. I believe, will give future research the most meaning and value to society as a whole.

When running a marathon people often talk about ‘hitting the wall’, I believe there is a similar stage when undertaking a long piece of research. I seemed to have hit the wall more than once. There were times when there didn’t appear to be a lot to be done and so it felt like a lot of time was passing with very little movement forward. Although this project has taken three years to complete from conception to virtual completion; Time, I think, has been my greatest distraction. From having almost too much time between each stage during the first year to having a feeling that time was running out during the middle part of

this final year. On reflection, my distraction and focus on time has again allowed me to avoid the bigger picture. I never, even after many suggestions by Nick, completed an overall time line for my research, instead, always focusing on the tasks that needed completing in the next month or so.

Time was also proved to be my biggest ‘wall’, as I was collecting data, it did not seem as though I would collect as much data as I had anticipated in the remaining time. I had a few days of anxiety, and we all know that too much anxiety prevents intellectualisation and rationalisation, so in the future I think I will heed Nick’s suggestions and complete a project time line highlighting major milestones to hit along the way, almost like the 5, 10 and 13mile marks on the way to the marathon finish line. This should allow me to continue working through any times of anxiety. The last couple months has shown this, when after hitting my ‘wall’, I actually did provide a more concrete timeline and Nick suggested a cut off point for data collection, this has meant that my then ambitious targets for completion of writing drafts etc. have shown to be more realistic and not ambitious and I have most of a draft version of the thesis portfolio completed a month in advance.

I believe I have learnt that the way I tackle any problems is to dig in and get on with it. Actually problems keep me interested. It is in times of easy sailing that I am liable to become less motivated and to allow Time to pass with little work done. It seems as though I need some external agency that I perceive is evaluating me and giving me, or monitoring, my self-imposed deadlines. I think knowing this at the beginning of my research and professional life, would be a

useful tool in maintaining enthusiasm and steady progress on future research I undertake.

As I‘ve said above, my belief is that research needs to have real world application and as researchers in the field of social sciences we should consider ourselves directly answerable to the stake holders in the work we do. I believe that this is one of the biggest strengths of this particular project.

Autism is said to be moving towards epidemic proportions, in actual fact, if the ubiquity of this condition is to be believed this epidemic begins to look like a pandemic. Yet with approximately 1% of the child population being diagnosed with some form of Autism, it would seem as though we are very slow off the starting blocks in addressing the problems in adult services. It seems to have been forgotten that children with autism will grow into adults with autism. There is little research on adults with autism, with or without an additional learning disability or mental health problems, so it was important to me that this project not only added something to our understanding of adults with autism, but also whether there is any merit in giving an adult a diagnosis, if they are already receiving a service from adult learning disability services. It is this passion and belief that this type of research is vital in enabling services to better provide for adults with autism. It is clear that this whole project is just the first step in a long journey;

> “there [is] only one Road; that it [is] like a great river: its springs [are] at every doorstep, and every path [is] its tributary. It's a dangerous business...going out of your door. You step into the Road, and if you

> don't keep your feet, there is no knowing where you might be swept off to" (Tolkien, 2001, p. 98)

As I was finishing my research, I was already seeing the next project, or the next question that should at least be asked, if not necessarily answered. I also think that as I was able to do isolated parts of the project along the path, this may not be the most integrated way to approach it, but it did allow me to plan to complete each part fully; different parts happening at different times. For example, having the systematic literature review to complete as well as the empirical paper allowed me to be working on this part of the thesis whilst there was very little happening on the empirical part. Finishing the SLR earlier than the empirical paper helped me to structure my thinking for the writing of the empirical paper, how both papers complemented each other, and now, reflecting on it, part of me feels it would have been more beneficial to complete the SLR as early as possible. This would have given me a solid foundation of understanding on which to build the empirical research. This is a lesson for the future: conduct and most importantly write an SLR in a related area before embarking on empirical work.

So now, again I feel as though my finishing line is just another few metres ahead and with little now to do before I reach this and get my bag of goodies! It feels as though I really had better watch my feet otherwise I may find myself starting the next marathon before I have finished and recovered from this one.

Appendix 2 – Key Words used for Systematic Literature Search

(mental deficiency OR mental* handicap* OR mental* retard* OR mental* impair* OR mental* disab* OR mental* subnormal* OR learning disab* OR learning difficult* OR intellectual difficult* OR intellectual disab*) AND (stress* OR burnout OR attribution* OR optimism* OR perception*) AND (care staff OR staff OR care-staff OR stress or burnout or attribution) AND (challenging behaviour or aggression or aggress* behaviour OR disord* behaviour or self-injur* or self injur* or damag* propert* or destruct* propert* or problem* behaviour OR disorder* behaviour OR verbal aggression or threat* or screaming or smearing or sexual behaviour)

Appendix 3 – Papers excluded at full text review stage

Author and Date	Title	Journal	Reason for exclusion
Donaldson (2002)	Work stress and people with Down Syndrome and dementia	Down's Syndrome Research and Practice, 8, 74-78	Investigated staff well-being, did not investigate perceptions of CB
Hastings, Horne & Mitchell (2004)	Burnout in direct care staff in intellectual disability services: a factor analytic study of the Maslach Burnout Inventory	Journal of Intellectual Disability Research, 48, 268-273	Investigated the factor loading of the MBI, not perceptions of CB
Hastings & Remington (1994)	Rules of engagement: Toward an analysis of staff responses to challenging behaviour	Research in Developmental Disabilities, 15, 279-298	Review Article
Hastings, Tombs, Monzani & Boulton (2003)	Determinants of negative emotional reactions and causal beliefs about self-injurous behvaiour: An expiremental study	Journal of Intellectual Disability Research, 47, 59-67	Participants were staff working with children and adolescents
Hatton, Rivers, Mason, Mason, Kiernan, Emerson, Alborz & Reeves (1999)	Staff stressors and staff outcomes in services for adults with intellectual disabilities: the Staff Stressor Questionnaire	Research in Developmental Disabilities, 20, 269-285	Development of a questionnaire
Janssen, Schuengel & Stolk (2002)	Understanding challenging behaviour in people with severe and profound intellectual disability: a stress-attachment model	Journal of Intellectual Disability Research, 46, 445-453	Review Article
Jenkins, Rose & Lovell (1997)	Psychological well being of staff working with people who have challenging behvaiour	Journal of Intellectual Disability Research, 41, 501-511	No measure of perceptions of CB
Langdon, Yaguez & Kuipers (2007)	Staff working with people who have intellectual disabilities within secure hospitals: expressed emotion and its relationship to burnout, stress and coping	Journal of Intellectual Disabilities, 11, 343-357	No measure of perceptions of CB
Legget & Silvester (2003)	Care staff attributions for violent incidents involving male and female patients: a field study	British Journal of Clinical Psychology, 42, 393-406	Non-LD population

Author and Date	Title	Journal	Reason for exclusion
Leyin & Wakeley (2007)	Staff support, staff stress and job satisfaction in working with people with learning disabilities and challenging behaviour	Learning Disability Review, 12, 31-41	Did not investigate perceptions of CB
Mitchell & Hastings (2001)	Coping, burnout, and emotion in staff working in community services for people with challenging behaviors	American Journal on Mental Retardation, 106, 448-459	Did not investigate perceptions of CB
Potts, Halliday, Plimley, Wright & Cutherbertson (1995)	Staff stress and satisfaction in small staffed houses in the community: 2	British Journal of Nursing, 4, 495-501	Did not investigate perceptions of CB
Rose (1991)	Work stress in group homes for people with learning difficulties	Nursing Times, 87, 42-43	Did not investigate perceptions of CB
Williams & Rose (2007)	The development of a questionnaire to assess the perceptions of care staff towards people with intellectual disabilities who display challenging behaviour	Journal of Intellectual Disabilities, 11, 197-211	Development of a questionnaire

Appendix 4 – Quality Assessment Checklist

Each item was marked yes/no/unsure.

Item 1 - Theoretical Framework and Literature Review

- Is there an explicit account of theoretical framework and inclusion of a literature review?
  - Are key concepts explained / defined in review?
  - Does the review link with research purpose?
  - Is review related to research purpose?

Item 2 - Aims

- Clearly stated aims and objectives:
  - Is there a clear set of research aims and/or questions?
  - Are the aims or questions link to the problem and/or review?
  - Are the research questions amenable to the chosen design?

Item 3 - Context

- Clear description of context:
  - Is there an explanation of, and justification for, the focus of the study?
  - Is there a clinical rational?
  - Did the report justify the methods chosen?

Item 4 - Sample

- Clear description of sample:
  - Is the adequate details of the sample used in the study, critical to understanding the findings (sample number, age, sex, experience, clients)?

  - Is the sample truly representative of staff working with challenging behaviour?
  - Is there a clear description of the recruitment process?
  - Are sites of recruitment described?

Item 5 - Methodology – data collection and analysis (scored out of 3)

- Measures described adequately
  - Description of questionnaire or interview schedules or a description of interview topics.
- Main outcome measure accurate (valid and reliable) (only scored for quantitative methodology)
- Did the report adequately describe data collection?
  - Did the report adequately describe the analysis methods?
- If qualitative study, is there inclusion of sufficient original data to mediate between data and interpretation?
  - Does the report present original quotes or data from interviews?
  - Clear path between data – interpretation – conclusions?

Appendix 5 – Quality Assessment of Papers Included

Author and Year	Item 1	Item 2	Item 3	Item 4	Item 5				Total
					Measures	Valid/ Reliable	Data collection /analysis	Original Data	
Bailey, Hare, Hatton & Limb (2006)	✓	✓	✓	✓	✓	UN	UN	N/A	5
Bell & Espie (2002)	✓	✓	✓		✓	UN	✓	N/A	5
Bromley & Emerson (1995)	✓	✓	✓		UN	UN	✓	N/A	4
Campbell & Hogg (2008)	✓	✓	✓	✓	✓	✓	✓	N/A	7
Dagnan & Cairns (2005)	✓		✓	✓	✓	✓	✓	N/A	6
Dagnan, Trower & Smith (1998)	✓	✓	✓	✓	✓	UN	✓	N/A	6
Dowey, Toogood, Hastings & Nash (2007)	✓	UN	✓	✓	✓	UN	✓	N/A	5
Grey, McClean & Barnes-Holmes (2002)	✓	✓		✓	✓	✓	✓	N/A	6
Hastings, Reed & Watts (1997)	✓	✓	✓	✓		UN	✓	N/A	5
Heyman, Swain & Gillman (1998)		✓	✓		✓	N/A	✓	✓	5
Hill & Dagnan (2002)	✓	✓	✓		✓	UN	✓	N/A	5
Jahoda & Wanless (2005)	✓	✓	✓	✓	UN	N/A	UN	UN	4
Jones & Hastings (2003)	✓	✓	✓	✓	✓		✓	N/A	6
Kalsy, Heath, Adams & Oliver (2007)	✓	✓	✓	✓	✓	UN	✓	N/A	6
McGill, Bradshaw & Hughes (2007)	✓	✓	✓	✓	✓	✓	✓	N/A	7
McKenizie, Paxton, Loads, Kwaitek, McGregor & Sharp (2004)		✓	✓		✓	✓		N/A	4
Noone, Jones & Hastings (2006)	✓	✓	✓		✓	✓	✓	N/A	6
Rose & Clearly (2007)	✓	✓	✓	✓	✓	✓	✓	N/A	7
Rose & Rose (2005)	✓	✓	✓	✓	✓	UN	✓	N/A	6
Snow, Langdon and Reynolds (2007)	✓	✓	✓	✓	UN	✓	✓	N/A	6
Tierney, Quilan & Hastings (2007)		✓	✓	✓	✓	✓	✓	N/A	6
Tynan & Allen (2002)	✓	✓	✓	✓	✓	UN	✓	N/A	6
Wanless & Jahoda (2002)	✓	✓	✓	✓	UN	UN	✓	N/A	5
Weigelm, Langdon, Collins, O'Brien (2006)	✓	✓	✓		✓	✓	✓	N/A	6
Wilcox, Finlay & Edmonds (2006)	✓	✓	✓	✓	✓	N/A	✓	✓	7
Willner & Smith (2008)	✓	✓	✓	✓	✓	✓	✓	N/A	7

Appendix 6 – Author Guidelines

1. GENERAL

The *Journal of Applied Research in Intellectual Disabilities* is an international, peer-reviewed journal which draws together findings derived from original applied research in intellectual disabilities. The journal is an important forum for the dissemination of ideas to promote valued lifestyles for people with intellectual disabilities. It reports on research from the UK and overseas by authors from all relevant professional disciplines. It is aimed at an international, multi-disciplinary readership.

The topics it covers include community living, quality of life, challenging behaviour, communication, sexuality, medication, ageing, supported employment, family issues, mental health, physical health, autism, economic issues, social networks, staff stress, staff training, epidemiology and service provision. Theoretical papers are also considered provided the implications for therapeutic action or enhancing quality of life are clear. Both quantitative and qualitative methodologies are welcomed. All original and review articles continue to undergo a rigorous, peer-refereeing process.

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Authorship: Authors submitting a paper do so on the understanding that the manuscript has been read and approved by all authors and that all authors agree to the submission of the manuscript to the journal. ALL named authors must have made an active contribution to the conception and design and/or analysis and interpretation of the data and/or the drafting of the paper and ALL authors must have critically reviewed its content and have approved the final version submitted for publication. Participation solely in the acquisition of funding or the collection of data does not justify authorship.

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including title page, abstract, text, references, tables, and figure legends, but no embedded figures. Figure tags should be included in the file. Manuscripts should be formatted as described in the Author Guidelines below.

Please note that any manuscripts uploaded as Word 2007 (.docx) will be automatically rejected. Please save any .docx files as .doc before uploading.

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All articles submitted to the journal are assessed by at least two anonymous reviewers with expertise in that field. The Editors reserve the right to edit any contribution to ensure that it conforms with the requirements of the journal.

4. MANUSCRIPT TYPES ACCEPTED

Original Articles, Review Articles, Brief Reports, Book Reviews and ***Letters to the Editor*** are accepted. ***Theoretical Papers*** are also considered provided the implications for therapeutic action or enhancing quality of life are clear. Both quantitative and qualitative methodologies are welcomed. Articles are accepted for publication only at the discretion of the Editor. Articles should not exceed 7000 words. Brief Reports should not normally exceed 2000 words. Submissions for the Letters to the Editor section should be no more than 750 words in length.

5. MANUSCRIPT FORMAT AND STRUCTURE

5.1 Format

Language: The language of publication is English. Authors for whom English is a second language must have their manuscript professionally edited by an English speaking person before submission to make sure the English is of high quality. It is preferred that manuscripts are professionally edited. A list of independent suppliers of editing services can be found at www.blackwellpublishing.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

5.2 Structure

All manuscripts submitted to the *Journal of Applied Research in Intellectual Disabilities* should include:

Cover Page: A cover page should contain only the title, thereby facilitating anonymous reviewing. The authors' details should be supplied on a separate page and the author for correspondence should be identified clearly, along with full contact details, including e-mail address.

Running Title: A short title of not more than fifty characters, including spaces, should be provided.

Keywords: Up to six key words to aid indexing should also be provided.

Main Text: All papers should be divided into a structured summary (150 words) and the main text with appropriate sub headings. A structured summary should be given at the beginning of each article, incorporating the following headings: Background, Materials and Methods, Results, Conclusions. These should outline the questions investigated, the design, essential findings and main conclusions of the study. The text should proceed through sections of Abstract, Introduction, Materials and Methods, Results and Discussion, and finally Tables. Figures should be submitted as a separate file.

Style: Manuscripts should be formatted with a wide margin and double spaced. Include all parts of the text of the paper in a single file, but do not embed figures. Please note the following points which will help us to process your manuscript successfully:

-Include all figure legends, and tables with their legends if available. -Do not use the carriage return (enter) at the end of lines within a paragraph. -Turn the hyphenation option off.

-In the cover email, specify any special characters used to represent non-keyboard characters.

-Take care not to use l (ell) for 1 (one), O (capital o) for 0 (zero) or ß (German esszett) for (beta).

-Use a tab, not spaces, to separate data points in tables.

-If you use a table editor function, ensure that each data point is contained within a unique cell, i.e. do not use carriage returns within cells.

Spelling should conform to *The Concise Oxford Dictionary of Current English* and units of measurements, symbols and abbreviations with those in *Units, Symbols and Abbreviations* (1977) published and supplied by the Royal Society of Medicine, 1 Wimpole Street, London W1M 8AE. This specifies the use of S.I. units.

5.3 References

The reference list should be in alphabetic order thus:

-Emerson E. (1995) *Challenging Behaviour: Analysis and Intervention in People with Learning Disabilities*. Cambridge University Press, Cambridge.

-McGill P. & Toogood A. (1993) Organising community placements. In: *Severe Learning Disabilities and Challenging Behaviours: Designing High Quality Services* (Eds E. Emerson, P. McGill & J. Mansell), pp. 232-259. Chapman and Hall, London.

-Qureshi H. & Alborz A. (1992) Epidemiology of challenging behaviour. *Mental Handicap Research* 5, 130-145

Journal titles should be in full. References in text with more than two authors should be abbreviated to (Brown *et al*. 1977). Authors are responsible for the accuracy of their references.

We recommend the use of a tool such as EndNote or Reference Manager for reference management and formatting.

EndNote reference styles can be searched for here:

http://www.endnote.com/support/enstyles.asp

Reference Manager reference styles can be searched for here:

http://www.refman.com/support/rmstyles.asp

The Editor and Publisher recommend that citation of online published papers and other material should be done via a DOI (digital object identifier), which all

reputable online published material should have - see www.doi.org/ for more information. If an author cites anything which does not have a DOI they run the risk of the cited material not being traceable.

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Tables should include only essential data. Each table must be typewritten on a separate sheet and should be numbered consecutively with Arabic numerals, e.g. Table 1, and given a short caption.

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Appendix 7 – Ethical and Research and Development Approval

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Appendix 8 – Participant Information Sheet

RESEARCH INFORMATION

Care-Staff Perceptions of Challenging Behaviour in Adults with Autism and a Learning Disability

PART A: INFORMATION ABOUT THE RESEARCH STUDY

Who am I? My name is Tom Crossland and I am training to be a Clinical Psychologist, at The University of Hull. As part of my training I have to undertake a piece of research; this will go towards a thesis in my final year.

I am researching the different opinions of people that work in Learning Disability Services, with regards to challenging behaviour shown by people with different diagnoses (Autism and LD).

Where can I be contacted? I can be contacted by mail at The Department for Clinical Psychology, The Hertford Building, University of Hull, HU6 7RX or by telephone on 01482 464 106.

Why am I looking into this topic? Sometimes people with Learning Disabilities behave in a way that is confusing to us, the way we make sense of this behaviour affects how we feel and try to help the person. I am interested in researching whether someone having Autism may affect how carers' make sense of challenging behaviour, how they feel about the behaviour and how they may try to help the person.

The aim of this research is to try and understand how people make sense of challenging behaviour in people with Autism and a Learning Disability. This will help us to improve services for these people who are sometimes hard to help

What is a Learning Disability and Autism?

An individual is said to have a learning disability when they have some difficulties in the way they think, work things out and learn new things. They also sometimes have problems learning skills needed to get by in everyday life.

An individual is said to have Autism when they have difficulties in social situations; these difficulties are caused by problems with the way people communicate and understanding how people interact in social situations. They also often have behaviours that may be repetitive and are often confusing to us.

What do I want you to do? How long will this take? If you are willing to take part, I would like you to read four short vignettes about someone who is displaying behaviour that may be challenging. Two of the stories are about a person who has Autism and two are about a person who has a Learning Disability.

After reading the first vignette I will ask you to fill in three questionnaires. I will then give you the second vignette to read and so on for vignettes 3 and 4. This should take about 60 minutes.

Can you withdraw? If at any point during the project, if you change your mind about taking part you can just send me a note or give me a call and let me know you want to withdraw and I'll destroy your questionnaires.

What will happen to the information you give me? All the information given to me on the consent form, information form and questionnaires will be anonymous and will not be individually identifiable. The information you provide will be stored safely and securely. You have the right to withdraw from the project at any point.

What are the risks of taking part? Some people may find thinking about challenging behaviour distressing. If you find yourself becoming distressed, please let me know and you can stop taking part and we can talk about what was distressing and think about what to do next.

PART B: MY RESPONSIBILITIES TO YOU FOR TAKING PART

I will not identify you in any publication/giving out of the research findings.

All information collected during meetings and conversations will only be viewed by me and my supervisor, if requested, and remains confidential.

If you decide to take part you can:

- Refuse to answer any particular question, and to withdraw from the study up to the time of submission of the thesis.

- Ask any further questions about the study that occur to you during your participant.
- Be given access to a summary of the findings from the study, when it is concluded.

Researcher's Name: _____

Researcher's Signature: _____

Contact Details: _____

_____

_____

_____

Date: _____

Appendix 9 – Participant Consent Forms

RESEARCH CONSENT FORM

Care-Staff Perceptions of Challenging Behaviour in Adults with Autism and a Learning Disability

Tom Crossland, The Department of Clinical Psychology, Hertford Building, University of Hull, HU6 7RX.

	Please tick to confirm
‚ I confirm that I have read and understand the information sheet dated ..11th June 2008... (version ...2.1.....) for the above study.	☐
‚ I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
‚ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.	☐
‘ I agree to take part in the above research study.	☐

_____	_____	_____
Name	Date	Signature

_____	_____	_____
Person taking consent (if different from researcher)	Date	Signature

___Tom Crossland__	_____	_____
Researcher	Date	Signature

When complete, 1 copy for staff member: 1 copy for researcher

Appendix 10 – Demographic Information Forms

Demographic Information

This information is being taken for information purposes and will be kept in a safe place and will be anonymous

Age: _____

Gender (Please tick one): ☐ Male Female ☐

Job title: _____ Years of working as care staff:_____

Place of work (Please tick):

☐ Residential Service (LA) ☐ Residential Service (Private)

☐ Supported Living ☐ Day Service (LA)

☐ NHS Inpatient Unit ☐ Other

Length of time in current post: _____

Amount of experience working with people with a learning disability

1	2	3	4	5
Non at all		Some		A lot

Amount of experience working with people with autism

1	2	3	4	5
Non at all		Some		A lot

Amount of experience working with people with challenging behaviour

1	2	3	4	5
Non at all		Some		A lot

Appendix 11 – Questionnaires

Challenging Behaviour Representations Questionnaire (Adapted from Campbell, 2007)

Please think about your own ideas about William's behaviour and tick the box that best describes *YOUR* views for each item.

You may strongly agree, agree, neither agree nor disagree or strongly disagree with each item.

	Strongly agree	Agree	Neither Agree nor disagree	disagree	Strongly disagree
1. William can be helped by spending time with him to deal with his behaviour.					
2. As a consequence of William's behaviours he will get what he wants.					
3. William's behaviour is motivated only by food, warmth or sex.					
4. William is in control of his behaviour but is pretending not to be.					
5. As a consequence of William's behaviour he is disempowered.					
6. William can be helped by trying to understand, instead of blaming.					
7. William can be said to have challenging behaviour when he is frustrating.					
8. William is engaging in the behaviour because he is over sensitive to criticism.					
9. William can be helped by use of calm behaviour and responses to his behaviour.					
10. William could be said to have challenging behaviour when he follows staff around					
11. As a response to working with William I would experience feelings of being offended.					

12. As a consequence of his behaviour, William brings into question the values of staff.					
13. William engages in his behaviour because he has ingrained and stubborn natures.					
14. William can be helped by care planning.					
15. As a response to working with William. I would experience feelings of a need to escape the area.					
16. William could be said to have challenging behaviour when he questions instructions.					
17. William can be helped by looking at the person as an individual.					
18. As a consequence of his behaviour, William do not appreciate that the system has been organised for him.					
19. William could be said to have challenging behaviour when he showed a lack of respect.					
20. As a consequence of his behaviour, William avoids doing any work.					
21. As a response to working with William. I would experience feelings of being sickened by his behaviour.					
22. As a response to working with William, I would experience feelings of fear of what I might do to him.					
23. William could be said to have challenging behaviour when he has erratic movements.					
24. As a consequence of William's behaviour he would achieve his goals.					
25. As a response to working with William I would experience feelings of being bullied.					
26. William can be helped by teaching new ways to respond.					

27. As a consequence of William's behaviour, he poses a challenge to professionals in social care.					
28. William could be said to have challenging behaviour when he pokes his eyes with a finger.					
29. As a response to working with William, I would experience feelings of being provoked into action I later regret					
30. As a consequence of his behaviour, William would gain control of situations.					
31. William could be said to have challenging behaviour when his is confusing.					
32. As a response to working with William, I would experience feeling of total and utter despair.					
33. William engages in his behaviour because they are so deep seated that they could never be stopped.					
34. As a response to working with William, I would experience feelings of fear of showing 'weakness' in front of colleagues.					
35. William engages in his behaviour because he has needs which can never be effectively met.					
36. William can be helped by effectively monitoring changes.					
37. William engages in his behaviour because hey is motivated by selfishness.					
38. William engages in his behaviour because he likes to challenge the system constantly.					
39. William can be helped by changing staff attitudes.					
40. William could be said to have challenging behaviour when he never eats what he is offered.					

Challenging Behaviour Attribution Scale (Adapted from Hastings, 1997)

We are interested in why YOU think that William displays challenging behaviours such as those described above. Consider how likely it is that each of the following statements are reasons for William to engage in challenging behaviours. Simply think generally about the most likely reasons for William behaving in this way.

Please give your response to each of the possible reasons, and use the scales below each reason to indicate your opinion. The key shows what the points on the scales mean.

Please indicate your response by placing a tick in the appropriate box on the scale.

William engages in challenging behaviours BECAUSE

	Possible reason for William's behaviour	Very Unlikely	Unlikely	Equally Likely and Unlikely	Likely	Very Likely
1	He is given things to do that are too difficult for him					
2	He is physically ill					
3	He does not like bright lights					
4	He is tired					
5	He cannot cope with high levels of stress					
6	His house is too crowded with people					
7	He is bored					
8	Because of the medication that he is given					
9	He is unhappy					
10	He has not got something that he wanted					
11	He lives in unpleasant surroundings					
12	He enjoys it					
13	He is in a bad mood					
14	High humidity makes him uncomfortable					

15	He is worried about something					
16	Because of some biological process in his body					
17	His surroundings are too warm/cold					
18	He wants something					
19	He is angry					
20	There is nothing else for him to do					
21	He lives in a noisy place					
22	He feels let down by somebody					
23	He is physically disabled					
24	There is not very much space in his house to move around in					
25	He got left on his own					
26	He is hungry or thirsty					
27	He is frightened					
28	Somebody he dislikes is nearby					
29	People do not talk to him very much					
30	He wants to avoid uninteresting tasks					
32	He does not go outdoors very much					
33	He is rarely given activities to do					
34	He wants attention from other people					

Challenging Behaviour Perceptions Questionnaire (Adapted from Williams & Rose, 2007)

We are interested in your own personal views of how you now see William's challenging behaviour.

Please indicate how much you agree or disagree with the following statements about challenging behaviour by ticking the appropriate box.

	VIEWS ABOUT CHALLENGING BEHAVIOUR	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE OR DISAGREE	AGREE	STRONGLY AGREE
1	William's challenging behaviour has had major consequences on his life					
2	William's challenging behaviour has become easier for him to live with					
3	William's challenging behaviour has not had much effect on his life					
4	William's challenging behaviour has serious financial consequences for him					
5	William's challenging behaviour is very disabling for him					
6	William's challenging behaviour has strongly affected the way others see me					
7	William's challenging behaviour has had serious financial consequences for me					
8	William's illness has strongly affected the way I see myself as a person					
9	There is a lot I can do to control his challenging behaviour					
10	What I do determine whether William's challenging behaviour gets better or worse					

11	William's challenging behaviour is likely to be permanent rather than temporary					
12	William's challenging behaviour will last for a long time					
13	William's challenging behaviour may change from time to time					
14	There will be periods of lots of challenging behaviour and periods of improvement					
15	William's challenging behaviour makes me feel afraid					
16	When I think about William's challenging behaviour I get upset					
17	William's challenging behaviour makes me feel angry					
18	William's challenging behaviour does not worry me					
19	William's challenging behaviour makes me feel anxious					

Perceived Stress Scale – 10 (Cohen, Kamarck & Mermelstein, 1983)

This is a measure of the degree to which you are experiencing stress in your various life situations. For each item, choose the number that best describes you by ticking one of the boxes:

	Never	Almost Never	Some-times	Fairly Often	Very often
In the last month, how often have you been upset because something happened unexpectedly?					
In the last month, how often have you felt that you were unable to control important things in your life?					
In the last month, how often have you felt nervous and "stressed"?					
In the last month, how often have you felt confident about your ability to handle your personal problems?					
In the last month, how often have that things were going your way?					
In the last month, how often have you found that you could not cope with all the things that you had to do?					
In the last month, how often have you been able to control irritations in your life?					
In the last month, how often have you felt that you were on top of things?					
In the last month, how often have you been angered because of things that were outside your control?					
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

Appendix 12 – Summary of analysis for empirical paper

*12.1 – Challenging Behaviour Perception Questionnaire Repeated Measures ANOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table 4. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of consequences for the client scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.227	1	0.227	3.296
Error (Label)	2.483	36	0.069	
Behaviour	0.033	1	0.033	0.398
Error (Behaviour)	2.957	36	0.082	
Label * Behaviour	0.007	1	0.007	0.140
Error (Label * Behaviour)	1.743	36	0.048	

Table 5. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of consequences for the carer scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.003	1	0.003	0.015
Error (Label)	7.219	36	0.201	
Behaviour	0.192	1	0.192	0.912
Error (Behaviour)	7.586	36	0.211	
Label * Behaviour	0.108	1	0.108	0.700
Error (Label * Behaviour)	5.559	36	0.154	

Table 6. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of control by the client scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	2.069	1	2.069	8.771*
Error (Label)	8.493	36	0.236	
Behaviour	0.002	1	0.002	0.010
Error (Behaviour)	5.811	36	0.161	
Label * Behaviour	0.137	1	0.137	1.000
Error (Label * Behaviour)	4.926	36	0.137	

Table 7. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of the timeline (chronic/acute) scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.894	1	0.894	3.015
Error (Label)	10.669	36	0.296	
Behaviour	0.042	1	0.042	0.225
Error (Behaviour)	6.770	36	0.188	
Label * Behaviour	0.610	1	0.610	2.385
Error (Label * Behaviour)	9.203	36	0.256	

Table 8. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of timeline (episodic) scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.243	1	0.243	5.366*
Error (Label)	1.632	36	0.045	
Behaviour	0.108	1	0.108	1.107
Error (Behaviour)	3.517	36	0.098	
Label * Behaviour	0.027	1	0.027	0.414
Error (Label * Behaviour)	2.348	36	0.065	

Table 9. ANOVA summary table for effects of label, behaviour and interaction effects on the perceptions of emotional representation scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.143	1	0.143	1.473
Error (Label)	3.487	36	0.097	
Behaviour	0.260	1	0.260	2.264
Error (Behaviour)	4.130	36	0.115	
Label * Behaviour	0.370	1	0.370	2.960
Error (Label * Behaviour)	4.50	36	0.125	

*12.2 – Challenging Behaviour Attributions Scale Repeated Measures ANOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table10. ANOVA summary table for effects of label, behaviour and interaction effects on the learned behaviour attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.035	1	0.035	0.221
Error (Label)	5.653	36	0.157	
Behaviour	0.094	1	0.094	0.785
Error (Behaviour)	4.321	36	0.120	
Label * Behaviour	0.072	1	0.072	0.967
Error (Label * Behaviour)	2.683	36	0.075	

Table 11. ANOVA summary table for effects of label, behaviour and interaction effects on the positive learned behaviour attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.015	1	0.015	0.074
Error (Label)	7.360	36	0.204	
Behaviour	0.027	1	0.027	0.153
Error (Behaviour)	6.348	36	0.176	
Label * Behaviour	0.108	1	0.108	0.984
Error (Label * Behaviour)	3.954	36	0.110	

Table 12. ANOVA summary table for effects of label, behaviour and interaction effects on the negative learned behaviour attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.042	1	0.042	0.190
Error (Label)	8.020	36	0.223	
Behaviour	0.488	1	0.488	2.673
Error (Behaviour)	6.574	36	0.183	
Label * Behaviour	0.002	1	0.002	0.014
Error (Label * Behaviour)	4.311	36	0.120	

Table 13. ANOVA summary table for effects of label, behaviour and interaction effects on the biological attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0	1	0	0.004
Error (Label)	4.061	36	0.113	
Behaviour	0.011	1	0.011	0.101
Error (Behaviour)	3.873	36	0.108	
Label * Behaviour	0.002	1	0.002	0.036
Error (Label * Behaviour)	2.381	36	0.066	

Table 14. ANOVA summary table for effects of label, behaviour and interaction effects on the emotional attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.040	1	0.040	0.333
Error (Label)	4.301	36	0.119	
Behaviour	0.003	1	0.003	0.063
Error (Behaviour)	1.951	36	0.054	
Label * Behaviour	0.017	1	0.017	0.468
Error (Label * Behaviour)	1.286	36	0.036	

Table 15. ANOVA summary table for effects of label, behaviour and interaction effects on the environmental attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.517	1	0.517	6.975*
Error (Label)	2.670	36	0.074	
Behaviour	0.137	1	0.137	1.640
Error (Behaviour)	3.004	36	0.083	
Label * Behaviour	0.061	1	0.061	0.909
Error (Label * Behaviour)	2.408	36	0.067	

Table 16. ANOVA summary table for effects of label, behaviour and interaction effects on the self-stimulation attribution scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.048	1	0.048	0.394
Error (Label)	4.398	36	0.122	
Behaviour	0.048	1	0.048	0.454
Error (Behaviour)	3.812	36	0.106	
Label * Behaviour	0.469	1	0.469	4.338*
Error (Label * Behaviour)	3.891	36	0.108	

*12.3 – Challenging Behaviour Representation Questionnaire Repeated Measures ANOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table 17. ANOVA summary table for effects of label, behaviour and interaction effects on the scores on the identity scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	27.676	1	27.676	2.658
Error (Label)	374.824	36	10.412	
Behaviour	0.108	1	0.108	0.027
Error (Behaviour)	145.392	36	4.039	
Label * Behaviour	9.757	1	9.757	2.346
Error (Label * Behaviour)	149.743	36	4.160	

Table 18. ANOVA summary table for effects of label, behaviour and interaction effects on the scores on the cause scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	73.081	1	73.081	9.399*
Error (Label)	279.919	36	7.776	
Behaviour	31.243	1	31.243	3.608
Error (Behaviour)	311.757	36	8.660	
Label * Behaviour	3.892	1	3.892	0.864
Error (Label * Behaviour)	162.108	36	4.503	

Table 19. ANOVA summary table for effects of label, behaviour and interaction effects on the scores on the consequences scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	0.169	1	0.169	0.052
Error (Label)	117.581	36	3.266	
Behaviour	1.953	1	1.953	0.577
Error (Behaviour)	121.797	36	3.383	
Label * Behaviour	0.331	1	0.331	0.68
Error (Label * Behaviour)	176.419	36	4.901	

Table 20. ANOVA summary table for effects of label, behaviour and interaction effects on the scores on the emotional reaction scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	1.324	1	1.324	0.431
Error (Label)	110.676	36	3.074	
Behaviour	1.730	1	1.730	0.550
Error (Behaviour)	113.270	36	3.146	
Label * Behaviour	0	1	0	0
Error (Label * Behaviour)	119.0	36	3.306	

Table 21. ANOVA summary table for effects of label, behaviour and interaction effects on the scores on the treatment/control scale

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Label	4.926	1	4.926	1.841
Error (Label)	96.324	36	2.676	
Behaviour	9.250	1	9.250	2.504
Error (Behaviour)	133.000	36	3.694	
Label * Behaviour	0.547	1	0.547	0.120
Error (Label * Behaviour)	163.703	36	4.547	

*12.4 – Challenging Behaviour Perception Questionnaire Repeated Measures ANCOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table 22. ANCOVA summary table for effects of label and behaviour on the consequences for the client subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.031	1	0.031	0.444
Covariate (Place)	0.106	2	0.053	0.748
Covariate (PSS)	0.011	1	0.011	0.162
Covariate (ASC exp)	0.089	1	0.089	1.248
Covariate (CB exp)	0.007	1	0.007	0.097
Error (Label)	2.198	31	0.071	
Behaviour	0.266	1	0.266	3.180
Covariate (Place)	0.064	2	0.032	0.386
Covariate (PSS)	0.006	1	0.006	0.070
Covariate (ASC exp)	0.007	1	0.007	0.079
Covariate (CB exp)	0.208	1	0.208	2.488
Error (behaviour)	2.592	31	0.084	

Table 23. ANCOVA summary table for effects of label and behaviour on the consequences for the carer subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.390	1	0.390	1.898
Covariate (Place)	0.508	2	0.254	1.237
Covariate (PSS)	6.22×10^{-5}	1	6.22×10^{-5}	0.000
Covariate (ASC exp)	0.003	1	0.003	0.015
Covariate (CB exp)	0.446	1	0.446	2.174
Error (Label)	6.363	31	0.205	
Behaviour	0.003	1	0.003	0.020
Covariate (Place)	1.084	2	0.542	3.422
Covariate (PSS)	0.418	1	0.418	2.641
Covariate (ASC exp)	1.449	1	1.449	9.143*
Covariate (CB exp)	0.247	1	0.247	1.561
Error (behaviour)	4.912	31	0.158	

Table 24. ANCOVA summary table for effects of label and behaviour on the control by the carer subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	1.013	1	1.013	4.702*
Covariate (Place)	0.430	2	0.215	0.998
Covariate (PSS)	0.426	1	0.426	1.978
Covariate (ASC exp)	0.037	1	0.037	0.170
Covariate (CB exp)	1.372	1	1.372	6.365*
Error (Label)	6.682	31	0.216	
Behaviour	0.359	1	0.359	2.098
Covariate (Place)	0.051	2	0.026	0.150
Covariate (PSS)	0.076	1	0.076	0.446
Covariate (ASC exp)	0.001	1	0.001	0.008
Covariate (CB exp)	0.189	1	0.189	1.108
Error (behaviour)	5.299	31	0.171	

Table 25. ANCOVA summary table for effects of label and behaviour on the timeline chronic/acute subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	2.350	1	2.350	8.359*
Covariate (Place)	0.038	2	0.019	0.067
Covariate (PSS)	0.233	1	0.233	0.830
Covariate (ASC exp)	0.039	1	0.039	0.138
Covariate (CB exp)	1.064	1	1.064	3.784
Error (Label)	8.713	31	0.281	
Behaviour	0.021	1	0.021	0.129
Covariate (Place)	0.440	2	0.220	1.376
Covariate (PSS)	1.520	1	1.520	9.503*
Covariate (ASC exp)	0.031	1	0.031	0.196
Covariate (CB exp)	0.427	1	0.427	2.670
Error (behaviour)	4.959	31	0.160	

Table 26. ANCOVA summary table for effects of label and behaviour on the timeline episodic subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.033	1	0.003	0.744
Covariate (Place)	0.099	2	0.049	1.122
Covariate (PSS)	0.012	1	0.012	0.268
Covariate (ASC exp)	0.173	1	0.173	3.929
Covariate (CB exp)	0.002	1	0.002	0.050
Error (Label)	1.363	31	0.044	
Behaviour	8.931×10^{-5}	1	8.931×10^{-5}	0.001
Covariate (Place)	0.111	2	0.055	0.514
Covariate (PSS)	0.007	1	0.007	0.061
Covariate (ASC exp)	0.037	1	0.037	0.345
Covariate (CB exp)	0.004	1	0.004	0.036
Error (behaviour)	3.335	31	0.108	

Table 27. ANCOVA summary table for effects of label and behaviour on the Emotional Representation subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.021	1	0.021	0.207
Covariate (Place)	0.096	2	0.048	0.463
Covariate (PSS)	0.073	1	0.073	0.699
Covariate (ASC exp)	0.062	1	0.062	0.595
Covariate (CB exp)	0.081	1	0.081	0.776
Error (Label)	3.219	31	0.104	
Behaviour	0.059	1	0.059	0.492
Covariate (Place)	0.053	2	0.027	0.221
Covariate (PSS)	0.221	1	0.221	1.832
Covariate (ASC exp)	0.080	1	0.080	0.661
Covariate (CB exp)	0.034	1	0.034	0.280
Error (behaviour)	3.736	31	0.121	

*12.5 – Challenging Behaviour Attributions Scale Repeated Measures ANCOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table 28. ANCOVA summary table for effects of label and behaviour on the Learned Behaviour subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.017	1	0.017	0.096
Covariate (Place)	0.116	2	0.058	0.328
Covariate (PSS)	0.068	1	0.068	0.383
Covariate (ASC exp)	0.045	1	0.045	0.256
Covariate (CB exp)	0.006	1	0.006	0.036
Error (Label)	5.480	31	0.177	
Behaviour	0.011	1	0.011	0.086
Covariate (Place)	0.088	2	0.044	0.337
Covariate (PSS)	0.072	1	0.072	0.558
Covariate (ASC exp)	0.032	1	0.032	0.243
Covariate (CB exp)	0.023	1	0.023	0.178
Error (behaviour)	4.027	31	0.130	

Table 29. ANCOVA summary table for effects of label and behaviour on the Learned Behaviour (positive) subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.067	1	0.067	0.290
Covariate (Place)	0.103	2	0.051	0.222
Covariate (PSS)	0.003	1	0.003	0.012
Covariate (ASC exp)	0.061	1	0.061	0.263
Covariate (CB exp)	0.007	1	0.007	0.030
Error (Label)	7.189	31	0.232	
Behaviour	0.111	1	0.111	0.577
Covariate (Place)	0.011	2	0.005	0.028
Covariate (PSS)	0.208	1	0.208	1.076
Covariate (ASC exp)	0.021	1	0.021	0.108
Covariate (CB exp)	0.058	1	0.058	0.300
Error (behaviour)	5.981	31	0.193	

Table 30. ANCOVA summary table for effects of label and behaviour on the Learned Behaviour (negative) subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.067	1	0.067	0.288
Covariate (Place)	0.297	2	0.149	0.638
Covariate (PSS)	0.613	1	0.613	2.635
Covariate (ASC exp)	0.029	1	0.029	0.124
Covariate (CB exp)	0.000	1	0.000	0.000
Error (Label)	7.216	31	0.233	
Behaviour	0.233	1	0.233	1.274
Covariate (Place)	0.559	2	0.279	1.530
Covariate (PSS)	0.044	1	0.044	0.240
Covariate (ASC exp)	0.048	1	0.048	0.263
Covariate (CB exp)	0.012	1	0.012	0.063
Error (behaviour)	5.662	31	0.183	

Table 31. ANCOVA summary table for effects of label and behaviour on the Biological subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.501	1	0.501	4.717*
Covariate (Place)	0.203	2	0.101	0.956
Covariate (PSS)	0.207	1	0.207	1.951
Covariate (ASC exp)	0.023	1	0.023	0.217
Covariate (CB exp)	0.215	1	0.215	2.025
Error (Label)	3.290	31	0.106	
Behaviour	0.002	1	0.002	0.015
Covariate (Place)	0.085	2	0.043	0.403
Covariate (PSS)	0.358	1	0.358	3.409
Covariate (ASC exp)	0.007	1	0.007	0.063
Covariate (CB exp)	0.034	1	0.325	0.325
Error (behaviour)	3.254	31	0.105	

Table 31. ANCOVA summary table for effects of label and behaviour on the Emotional subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.005	1	0.005	0.041
Covariate (Place)	0.050	2	0.025	0.194
Covariate (PSS)	0.035	1	0.035	0.269
Covariate (ASC exp)	0.252	1	0.252	1.950
Covariate (CB exp)	0.013	1	0.013	0.101
Error (Label)	4.012	31	0.129	
Behaviour	0.035	1	0.035	0.802
Covariate (Place)	0.079	2	0.040	0.912
Covariate (PSS)	0.166	1	0.166	3.836
Covariate (ASC exp)	0.215	1	0.215	4.955*
Covariate (CB exp)	0.102	1	0.102	2.358
Error (behaviour)	1.343	31	0.043	

Table 32. ANCOVA summary table for effects of label and behaviour on the Environmental subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.031	1	0.031	0.396
Covariate (Place)	0.062	2	0.031	0.402
Covariate (PSS)	0.133	1	0.133	1.721
Covariate (ASC exp)	0.097	1	0.097	1.250
Covariate (CB exp)	0.004	1	0.004	0.053
Error (Label)	2.402	31	0.077	
Behaviour	0.162	1	0.162	2.530
Covariate (Place)	0.017	2	0.008	0.130
Covariate (PSS)	0.879	1	0.879	13.690**
Covariate (ASC exp)	0.035	1	0.035	0.542
Covariate (CB exp)	0.017	1	0.017	0.266
Error (behaviour)	1.990	31	0.064	

Table 33. ANCOVA summary table for effects of label and behaviour on the Stimulation subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.012	1	0.012	0.096
Covariate (Place)	0.330	2	0.165	1.314
Covariate (PSS)	0.138	1	0.138	1.102
Covariate (ASC exp)	0.179	1	0.179	1.426
Covariate (CB exp)	0.001	1	0.001	0.008
Error (Label)	3.895	31	0.126	
Behaviour	0.008	1	0.008	0.070
Covariate (Place)	0.102	2	0.051	0.472
Covariate (PSS)	0.076	1	0.076	0.703
Covariate (ASC exp)	0.155	1	0.155	1.432
Covariate (CB exp)	0.045	1	0.045	0.413
Error (behaviour)	3.350	31	0.108	

*12.6 – Challenging Behaviour Perception Questionnaire Repeated Measures ANCOVA Summaries, * p ≤ 0.05, ** p ≤ 0.001*

Table 34. ANCOVA summary table for effects of label and behaviour on the Identity subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.129	1	0.129	0.875
Covariate (Place)	0.716	2	0.358	2.437
Covariate (PSS)	0.526	1	0.526	3.578
Covariate (ASC exp)	0.002	1	0.002	0.014
Covariate (CB exp)	0.009	1	0.009	0.062
Error (Label)	4.556	31	0.147	
Behaviour	0.048	1	0.048	0.797
Covariate (Place)	0.388	2	0.194	3.218
Covariate (PSS)	0.018	1	0.018	0.305
Covariate (ASC exp)	0.062	1	0.062	1.023
Covariate (CB exp)	0.008	1	0.008	0.131
Error (behaviour)	1.870	31	0.060	

Table 35. ANCOVA summary table for effects of label and behaviour on the Cause subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.014	1	0.014	0.128
Covariate (Place)	0.521	2	0.260	2.311
Covariate (PSS)	0.281	1	0.281	2.495
Covariate (ASC exp)	0.042	1	0.042	0.376
Covariate (CB exp)	0.025	1	0.025	0.220
Error (Label)	3.493	31	0.113	
Behaviour	0.515	1	0.515	3.996
Covariate (Place)	0.072	2	0.036	0.280
Covariate (PSS)	0.033	1	0.033	0.258
Covariate (ASC exp)	0.044	1	0.044	0.344
Covariate (CB exp)	0.494	1	0.494	3.828
Error (behaviour)	3.998	31	0.129	

Table 36. ANCOVA summary table for effects of label and behaviour on the Consequences subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.141	1	0.141	2.734
Covariate (Place)	0.006	2	0.003	0.055
Covariate (PSS)	0.045	1	0.045	0.868
Covariate (ASC exp)	0.013	1	0.013	0.255
Covariate (CB exp)	0.122	1	0.122	2.363
Error (Label)	1.596	31	0.051	
Behaviour	0.011	1	0.011	0.177
Covariate (Place)	0.012	2	0.006	0.100
Covariate (PSS)	0.046	1	0.046	0.756
Covariate (ASC exp)	0.029	1	0.029	0.477
Covariate (CB exp)	0.008	1	0.008	0.139
Error (behaviour)	1.893	31	0.061	

Table 37. ANCOVA summary table for effects of label and behaviour on the Emotional Reaction subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.046	1	0.046	1.145
Covariate (Place)	0.159	2	0.080	1.962
Covariate (PSS)	0.002	1	0.002	0.058
Covariate (ASC exp)	0.036	1	0.036	0.896
Covariate (CB exp)	0204	1	0.204	5.034*
Error (Label)	1.258	31	0.041	
Behaviour	0.000	1	0.000	0.000
Covariate (Place)	0.210	2	0.105	2.170
Covariate (PSS)	0.000	1	0.000	0.004
Covariate (ASC exp)	0.019	1	0.019	0.400
Covariate (CB exp)	0.004	1	0.004	0.082
Error (behaviour)	1.497	31	0.048	

Table 38. ANCOVA summary table for effects of label and behaviour on the Treatment/Control subscale scores with place of work, perceived stress, experience working with ASC and experience working with CB as covariates.

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	*F*-ratio
Main Effect (Label)	0.001	1	0.001	0.023
Covariate (Place)	0.041	2	0.021	0.454
Covariate (PSS)	0.015	1	0.015	0.321
Covariate (ASC exp)	0.016	1	0.016	0.349
Covariate (CB exp)	0.058	1	0.058	1.280
Error (Label)	1.405	31	0.045	
Behaviour	0.057	1	0.057	0.919
Covariate (Place)	0.075	2	0.037	0.600
Covariate (PSS)	0.037	1	0.037	0.593
Covariate (ASC exp)	0.046	1	0.046	0.731
Covariate (CB exp)	0.011	1	0.011	0.182
Error (behaviour)	1.933	31	0.062	